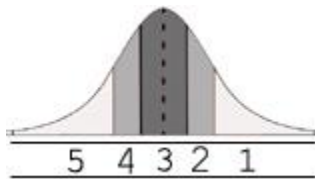


Description of sections

Aptitudes

An individual's **overall capacity** to learn the skills needed to perform job duties is based on his or her **specific aptitudes** for acquiring information and transforming it into action.

To describe aptitude levels, the Career Handbook uses the following scale based on the normal curve representing the Canadian labour force. For example, 1 indicates the level of aptitude that applies to the top 10 percent of the working population.



Levels legend:

1. The highest 10% of the working population
2. Upper third, exclusive of the highest 10%
3. Middle third of the working population
4. Lowest third, exclusive of the lowest 10%
5. Lowest 10% of the working population

Nine aptitude factors are rated according to the above scale to provide the aptitudinal profile needed to perform the work of an occupation. The Aptitudes Scale is based on the General Aptitude Test Battery (GATB).

G – General learning ability

Ability to 'catch on' or understand instructions and underlying principles; to reason and make judgments.

V – Verbal ability

Ability to understand the meaning of words and the ideas associated with them, and to use them effectively; to comprehend language, to understand relationships between words and to understand the meaning of whole sentences and paragraphs; to present information or ideas clearly.

N – Numerical ability

Ability to carry out arithmetical processes quickly and accurately.

S – Spatial perception

Ability to think visually about geometric forms and comprehend the two dimensional representation of three dimensional objects; to recognize the relationships resulting from the movement of objects in space. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to 'visualize' objects of two or three dimensions.

P – Form perception

Ability to perceive pertinent detail in objects and in pictorial and graphic material; to make visual comparisons and discriminations and to see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q – Clerical perception

Ability to perceive pertinent detail in verbal or tabular material; to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetical computation.

K – Motor co-ordination

Ability to co-ordinate eyes, hands and fingers rapidly and accurately when required to respond with precise movements.

F – Finger dexterity

Ability to move the fingers and manipulate small objects with the fingers rapidly and/or accurately.

M – Manual dexterity

Ability to move the hands easily and skillfully; to work with the hands in placing and turning motions.

Interests

The Canadian Work Preference Inventory (CWPI) is used to measure five occupational interests:

D – Directive

Directive persons like to take charge and control situations. They like to take responsibility for projects that require planning, decision making and co-ordinating the work of others. They are able to give direction and instructions easily. They enjoy organizing their own activities. They see themselves as independent and self-directing.

I – Innovative

Innovative persons like to explore things in depth and arrive at solutions to problems by experimenting. They are interested in initiating and creating different ways to solve questions and present information. They enjoy scientific subjects. Innovative persons prefer to be challenged with new and unexpected experiences. They adjust to change easily.

M – Methodical

Methodical persons like to have clear rules and organized methods to guide their activities. They prefer working under the direction or supervision of others according to given instructions, or to be guided by established policies and procedures. Methodical persons like to work on one thing until it is completed. They enjoy following a set routine and prefer work that is free from the unexpected.

O – Objective

Objective persons enjoy working with tools, equipment, instruments and machinery. They like to repair and/or fabricate things from various materials according to

specifications and using established techniques. Objective persons are interested in finding out how things operate and how they are built.

S – Social

Social persons like dealing with people. They enjoy caring for and assisting others in identifying their needs and solving their concerns. Social persons like working and co-operating with others. They prefer to be involved in work that requires interpersonal contact.

Data, people, and things

Data

Non-tangible information, knowledge and concepts related to data, people and things that are obtained by observation, investigation, visualization and mental creation. Written data take the form of numbers, words and symbols. Other data are ideas, conceptualization and oral verbalization.

0 – Synthesizing

Integrating analyses of data to discover facts and/or develop knowledge, concepts and interpretations.

1 – Co-ordinating

Determining time, place and sequence of operations or actions to be taken based on analysis of data; executing determinations and/or reporting events.

2 – Analyzing

Examining and evaluating data; frequently presenting alternative action in relation to the evaluation.

3 – Compiling

Accumulating information usually recorded physically but which may be stored mentally; gathering, collating and classifying information about data, people and things; frequently reporting and/or carrying out a prescribed action in relation to the information.

4 – Computing

Performing arithmetical operations and reporting on, and/or carrying out prescribed action in relation to them; does not include counting.

5 – Copying

Carrying out a set of explicit procedural/operational functions or processes based on an understanding of instructions or information necessary to perform the work.

6 – Comparing

Identifying the obvious functional, structural or compositional characteristics (in terms of similarity with, or difference from, established standards) of data, people and things.

7 – N/A

The functional digit 7 is not used in the Data column.

8 – Not Significant

Not significant

People

Human beings; also includes animals dealt with on an individual basis.

0 – Mentoring

Dealing with individuals in terms of their total personalities in order to advise, counsel and/or guide them with regard to problems that may be resolved by legal, scientific, clinical, spiritual and/or other professional principles.

1 – Negotiating

Exchanging ideas, information and opinions with others to arrive jointly at decisions, conclusions or solutions; often collaborating with others to formulate policies and programs.

2 – Instructing - Consulting

Teaching subject matter to others, giving advice or training others (including animals) through explanation, demonstration and supervised practice; making recommendations on the basis of subject matter expertise.

3 – Supervising

Determining or interpreting work procedures for a group or team of workers, assigning specific duties to them, maintaining harmonious relations and promoting efficiency.

4 – Diverting

Providing entertainment in one or more forms.

5 – Persuading

Influencing others in favour of a product, service or point of view.

6 – Speaking - Signaling

Talking with and/or signalling people to convey or exchange information; giving assignments and/or directions to helpers.

7 – Serving - Assisting

Attending to the needs and requests of people or animals or the expressed and implicit wishes of people; helping and supporting other workers in the performance of tasks.

8 – Not significant

Not significant

Things

Tangible and/or virtual objects that include the body, substances, materials, machines, tools, equipment, products and/or systems.

0 – Setting up

Adjusting machines or equipment by replacing or altering tools, jigs, fixtures and attachments to prepare them for operation, change performance or restore proper functioning if they break down.

1 – Precision working

Using the body and/or equipment to move, guide, place, install and/or interface with objects, in order to attain specifications and precise standards. Considerable judgment is required to select, adjust and utilize appropriate tools, products and/or materials to accomplish specified objectives.

2 – Controlling

Starting, stopping, controlling and adjusting machines and equipment designed to fabricate and/or process objects or materials. Operating machines involves minimal set up and adjustment as the work progresses. Controlling equipment involves observing gauges, dials and other indicators, and turning valves and other devices to control factors such as temperature, pressure, flow of liquids, speed of pumps and reactions of materials.

3 – Driving - Operating

Starting, stopping and running machines and equipment that must be steered or guided in order to fabricate, process and/or move things or people. Involves activities such as observing gauges and dials, estimating distances and determining speed and direction of other objects, pushing clutches or brakes, and pushing or pulling gear shifts or levers. Includes such machines as cranes, conveyor systems, tractors, and hoisting machines. Excludes manually powered and power-assisted machines.

4 – Operating - Manipulating

Using the body, tools or special devices to operate equipment or move, guide, install and place objects or materials. Requires a significant combination of motor coordination and manual and finger dexterity. Involves some latitude for judgment with regard to precision and selection of appropriate tool, object or material.

5 – Tending

Starting, stopping and observing machines and equipment; adjusting materials or controls of the machine such as changing guides, adjusting timers and temperature gauges, turning valves to allow flow of materials and flipping switches in response to lights. Minimal judgment is involved in making these adjustments.

6 – Feeding - Offbearing

Inserting, throwing, dumping or placing materials in or removing them from machines or equipment that are automatic or operated by other workers.

7 – Handling

Using the body, hand tools and/or special devices to work, move or carry objects or materials. The attainment of standards or the selection of appropriate tool, object or material is not significant.

8 – Not significant

Not significant

Physical activities

For an occupational group that has an asterisk (*) in the Physical activities ratings, refer to the Remarks section of that group for an explanation.

Vision

The use of sight in the work performed. The levels are organized in terms of the visual field involved in the performance of the work.

1 – Close visual acuity

Some or all work activities are performed close to the worker. The scope of the visual field is confined and requires close attention to detail.

Occupations where one or more of the Main Duties require close visual acuity are coded at this level. Other Main Duties in the unit group may involve other types of vision – for example, **Near and far vision (3)** or **Total visual field (4)**.

Examples:

- assembling micro-circuit boards
- machining to close tolerances
- cutting gems
- performing surgical procedures

2 – Near vision

Work activities are performed near the worker. The scope of the visual field is broader than in **Close visual acuity (1)**.

Examples:

- reading and interpreting drawings and specifications
- using computer keyboards and reading computer monitors
- repairing automobile engines
- setting up and operating machine tools

3 – Near and far vision

Some work activities involve the monitoring of processes, objects or situations in the work environment that are far from the worker. Other work activities involve **Near vision (2)**.

Examples:

- loading/unloading materials by hand or equipment
- installing shingles/tiles on roofs
- conducting surveys to establish legal property boundaries
- developing trading strategies by monitoring market conditions from the exchange floor

4 – Total visual field

Work activities involve the entire field of vision – **Near and far vision (3)** – as well as depth perception and peripheral vision.

Examples:

- driving vehicles
 - refereeing sports events
 - fighting fires
 - dancing onstage in ballet performances
-

Colour discrimination

The use of colour discrimination to identify, distinguish and match colours and different shades of the same colours.

0 – Not relevant

Colour discrimination is not relevant in the performance of the work.

Examples:

- cleaning windows
- providing information over the telephone
- interviewing, hiring and overseeing staff training
- translating documents

1 – Relevant

Colour discrimination is relevant in the performance of the work.

Examples:

- observing signals while operating vehicles
 - installing, testing and repairing electrical wiring
 - restoring and conserving museum and art gallery artifacts
 - designing, constructing and repairing dentures
-

Hearing

The use of hearing in the work performed. The levels are organized in terms of the type of auditory discrimination involved in the performance of the work.

1 – Limited

Hearing is limited to short and/or infrequent verbal interactions in order to perform the work.

Examples:

- typing and proofreading correspondence
- cutting and trimming meat, poultry and fish according to customers' orders
- carrying linen to and from laundry areas and running errands
- assisting mine workers in constructing underground installations

2 – Verbal interaction

Work activities involve communication with colleagues, clients and/or the public on a regular basis.

Examples:

- operating directory listing systems to provide directory assistance to customers
- resolving work problems and recommending measures to improve productivity
- consulting with families of the deceased regarding funeral services
- analyzing and providing advice on managerial methods and organization of establishments

3 – Other sound discrimination

Work activities involve the identification, assessment and/or production of sound. **Verbal interaction (2)** is included in this level.

Examples:

- leading bands, orchestras and choirs during musical rehearsals and performances
- administering audiometric tests to diagnose the degree of hearing impairment
- testing automotive systems and components using testing devices to isolate faults
- commanding fishing vessels by operating navigational instruments

Body position

Primary type of posture or body movement involved in performing the work. These postures or body movements range from simple to complex and from sedentary to mobile.

1 – Sitting

Work activities primarily involve sitting. **Standing and/or walking (2)** may occur but is incidental to the work being performed.

Examples:

- reading and editing copy to be published or broadcast
- preparing financial statements
- issuing aircraft take-off and landing instructions to pilot
- interviewing clients

2 – Standing and/or walking

Work activities primarily involve standing or walking.

Examples:

- cutting and styling hair
- dispensing prescribed medications to customers
- preparing and cooking meals
- delivering mail

3 – Sitting, standing, walking

This level involves work activities in combinations and varying degrees of **Sitting (1)** and **Standing and/or walking (2)**.

Examples:

- teaching students through lectures, discussions, audio visual presentations and field studies
- assessing land values for taxation purposes
- ensuring that systems and equipment are operating efficiently on job sites
- supervising and co ordinating the activities of workers who cut or stitch fabric, fur or leather garments

4 – Other body positions

Work activities involve body postures other than, or in addition to, **Sitting (1)** and **Standing and/or walking (2)** such as bending, stooping, kneeling and crouching

Examples:

- performing labouring duties in warehouses
- measuring, cutting and installing carpeting
- adjusting, repairing or replacing parts and components of automotive systems
- treating patients; disorders of the spine and body through corrective manipulation

Limb co-ordination

The use of limbs in performing work.

0 – Not relevant

Work activities do not involve co-ordination of limbs.

Examples:

- counselling clients and providing therapy
- proofreading materials before publication
- greeting patrons at entrances to restaurant dining rooms
- responding to enquiries at an information desk

1 – Upper limb co-ordination

Work activities involve co-ordination of upper limbs.

Examples:

- keyboarding
- performing maintenance services such as oil changes, lubrications and tune ups
- operating video cameras
- instructing students in sign language

2 – Multiple limb co-ordination

Work activities are carried out by co-ordinating the movements of upper limb(s) simultaneously with lower limb(s).

Examples:

- digging ditches using shovels
- operating and driving automobiles, vans and trucks
- climbing and working aloft on poles, ladders or other support structures
- performing in figure skating competitions

Strength

The use of strength in the handling of loads such as pulling, pushing, lifting and/or moving objects during the work performed.

1 – Limited

Work activities involve handling loads up to 5 kg.

Examples:

- examining and analyzing financial information
- selling insurance to clients
- conducting economic and technical feasibility studies
- administering and marking written tests

2 – Light

Work activities involve handling loads of 5 kg but less than 10 kg.

Examples:

- repairing soles, heels and other parts of footwear
- filing materials in drawers, cabinets and storage boxes
- preparing and cooking meals
- repairing paintings and artifacts

3 – Medium

Work activities involve handling loads between 10 kg and 20 kg.

Examples:

- setting up and operating finishing machines or finishing furniture by hand
- measuring, cutting and applying wallpaper to walls
- adjusting, replacing or repairing mechanical or electrical components using hand tools and equipment
- operating film cameras to record live events

4 – Heavy

Work activities involve handling loads more than 20 kg.

Examples:

- operating and maintaining deck equipment and performing other deck duties aboard ships
- shovelling cement into cement mixers and assisting in the maintenance and repair of roads
- measuring, cutting and fitting drywall sheets for installation on walls and ceilings
- operating power saws to thin and space trees in reforestation areas

Environmental conditions

For an occupational group that has an asterisk (*) in the Environmental conditions ratings, refer to the Remarks section of that group for an explanation.

Location

The work performed is carried out indoors in a regulated environment, indoors in an unregulated environment, outdoors or in a vehicle. In many occupations, the Main Duties may be performed in more than one location. Therefore, a group may have more than one **Location** code, for example:

- firefighting and fire prevention duties
- maintenance of interior/exterior of buildings
- managing operations and paperwork of farms

L1 – Regulated inside climate

A normal controlled environment such as an office, hospital or school.

L2 – Unregulated inside climate

An inside work environment where the temperature or humidity may be considerably different from normal room conditions. In some groups, the nature of the duties affects the temperature or humidity of the work environment.

Examples:

- extracting coal/ore from underground mines
- operating machines that press or blow molten glass
- unloading stock into cold storage freezers
- operating furnaces to melt metals for casting

L3 – Outside

An outdoor work environment where the worker is exposed to variations in weather conditions and seasonal weather patterns.

Examples:

- maintaining lawns
- repairing buildings, roads, bridges and dams
- operating power saws to thin and space trees
- delivering mail

L4 – In a vehicle or cab

An interior space in any form of vehicle or in the cab of heavy equipment operated by the worker.

Examples:

- driving buses
 - operating cranes
 - providing service to passengers during flights
 - operating subway transit vehicles
-

Hazards

Potential hazards to which the worker may be exposed. The codes provide an indication of the type(s) of hazard(s) most likely to be present in the workplace environment. They are not a measure of frequency, duration or degree of exposure to hazards, but an indication of the presence or absence of a particular hazard in the work environment.

H1 – Dangerous chemical substances

Exposure to any chemical that may endanger health through inhalation, absorption or ingestion, contact with skin or eyes, or any chemical with the potential for fire or explosion. Substances may be in forms such as solids, liquids, gases, aerosols or particles.

Examples:

- extracting coal (involves exposure to silica particles)
- removing asbestos insulation from buildings
- joining bricks with mortar (contains lime)
- mixing pesticides to spray crops
- painting building interiors

H2 – Biological agents

Exposure to infectious bacteria and viruses as a result of indirect contact with, or direct handling of, infectious materials or micro-organisms that may cause illness.

Examples:

- treating sick animals
- performing autopsies
- providing nursing care
- investigating outbreaks of food and environment related diseases and poisonings
- conducting microbiological tests and laboratory analyses

H3 – Equipment, machinery, tools

Working near or with equipment, instruments, machinery or power/hand tools that may be a potential source of accident or injury.

Examples:

- operating metal machining tools to shape metal
- using hand and power tools to fabricate wood products
- operating power saws to thin trees
- performing surgical procedures

H4 – Electricity

Exposure to electrical circuitry, high tension wires, transformers or other equipment that may be a potential source of electrical shock.

Examples:

- installing or repairing electrical wiring, motors and generators
- maintaining underground power transmission and distribution systems
- operating semi-automatic electric arc welding equipment
- repairing industrial electrical control systems and devices

H5 – Radiation

Exposure to ionizing radiation such as X-rays and radioactive substances or non-ionizing radiation such as radio frequencies and infrared, ultraviolet or visible light that may affect health adversely.

Examples:

- taking dental X-rays
- preparing and administering radioactive drugs
- operating welding equipment (ultraviolet)
- controlling the flow of air traffic using radar monitors, radio and other equipment (radio frequencies)
- conducting atmospheric research (visible laser light)
- creating glass objects (infrared)

H6 – Flying particles, falling objects

Exposure to flying particles and falling objects in the work environment that pose the risk of bodily injury. **Flying particles** refer to particles such as wood chips, metal particles and rock chips generated by the handling, crushing, grinding, rapid impact or explosion of materials.

Examples:

- operating machining tools such as lathes/grinders
- constructing underground installations in mines using hand and power tools
- operating chain saws to fell and delimb trees
- operating hoisting devices to load cargo onto ships
- laying brick to construct or repair walls

H7 – Fire, steam, hot surfaces

Exposure to fire (rather than exposure to flammable substances that may ignite), to emissions of steam or to intensely hot surfaces that are potential sources of injury.

Examples:

- fighting fires
- operating gas flame welding equipment
- cooking food
- forging metal items by hand or with forging machinery
- tending industrial ovens/furnaces

H8 – Dangerous locations

Working in locations that are inherently treacherous and are potential sources of injury. Such work locations include construction sites, underground sites, erected support structures and marine environments.

Examples:

- building underground passageways in mines
- installing roof shingles
- washing exterior windows of buildings
- commanding fishing vessels
- operating underwater video, sonar, recording and related equipment

Discomforts

Work conditions that create disturbances but are not hazardous. In general, these conditions create discomfort, but are not direct sources of injury. In extreme instances, however, these conditions might cause injury.

D1 – Noise

Work that produces sufficient noise – constant or intermittent – to cause marked distraction or possible loss of hearing.

Examples:

- operating drilling equipment in underground mines
- using power saws in logging operations
- blasting rock surface in mining
- operating heavy equipment for construction jobs
- using firearms

D2 – Vibration

Work that produces an oscillating or quivering motion of the body.

Examples:

- operating jackhammers to break up pavement
- driving tractors
- operating drills to produce blasting holes in mines
- shaping metal using power-forging machinery

D3 – Odours

The presence of noxious, intense or prolonged odours in the work environment.

Examples:

- cooking meals
- colouring, waving and styling hair
- preserving and sanitizing human remains
- using industrial cleaning solutions
- preparing standard cuts of meat, poultry and fish products for sale

D4 – Non-toxic dusts

The presence of non-poisonous airborne particles such as textile dust, flour, sand, sawdust and feathers in the work environment.

Examples:

- preparing dough or batter
- cutting fur pelts or fabric for garments
- operating woodworking machines
- cleaning chimneys
- removing poultry feathers

D5 – Wetness

Work that involves contact with water or other liquids.

Examples:

- digging ditches and trenches
- sorting, cleaning and packing fish in ice
- performing lifeguard duties
- operating underwater sonar equipment
- cleaning/disinfecting laboratory equipment

Education/training indicators

Education/training Indicators incorporate both educational and training requirements. These indicators consist of eight education or training types and two factors. The two factors are included in the rating where applicable. They represent requirements for entry into occupations that either cannot be objectively measured or are additional (+), and that are characterized as regulatory (R).

Each occupation is given multiple ratings, when applicable, to indicate all possible educational/training paths. In an occupation where high school and another type of training are required, the rating for high school completion has been dropped because a high school education is not sufficient for entry into that occupation.

Note: to obtain the lowest entry requirements – if the NOC describes the education or training as "usually" required, then it has been rated as if it is required. If it has been described as "may be" required, then it is rated as if it is not required. For all other cases, the education or training listed in the description has been rated as a possible option.

Indicator description

1 – No formal education or training requirements

The occupation does not require formal education or training.

2 – Some high school education and/or on the job training or experience

Some high school education is required, or on-the-job training or previous related experience alone is adequate. Some high school education may also be combined with on-the-job training or previous experience related to the occupation.

3 – High school

The completion of high school is required.

4 – Course work, training, workshops and/or experience related to the occupation

The completion of course work, training, workshops and/or experience related to the occupation, usually on completion of high school, is required. Course work refers to courses taken at special training institutes, colleges, universities and/or other training venues, but does not include the completion of a program.

5 – Apprenticeship, specialized training, vocational school training

The completion of an apprenticeship program, a specialized training program (e.g., hospital-based training for nurses) or a vocational school training program is required.

6 – College, technical school (certificate, diploma)

Completion of a program at a college or technical school is required. A program could lead to a certificate or a diploma.

7 – Undergraduate degree

Completion of a university degree at the bachelor's level is required.

8 – Post-graduate or professional degree

Completion of a university degree at the master's or doctoral level is required. Professional degrees that require additional education beyond the bachelor's level, such as law, dentistry, pharmacy and veterinary medicine, are also included.

+ – Additional requirement beyond education and training

This requirement could include extensive experience, demonstrated ability, creative ability, appointments, practicums and internships not included in other education and training descriptors. When this additional requirement is specified in the NOC, a '+' is attached to the relevant numerical ratings, or is listed separately, for an occupation. The amount of experience required may vary according to industry and/or employer. Demonstrated ability may be shown through a portfolio of work or the completion of an examination. Creative ability is required for artists, performers and athletes. In the case where two or more of these factors are required for an occupation (i.e., both extensive experience and demonstrated ability) only one '+' will appear. The narrative accompanying the ratings provides more specific details.

R – Regulated requirement(s)

An 'R' is added to the ratings to indicate that some regulated requirement exists for an occupation. Regulated requirements include licensing, certification and/or association

membership. In the case where two or more regulated requirements exist, only one 'R' will appear and the accompanying narrative provides additional details.