



KNOWLEDGE

Some Important Questions
About The Knowledge Required
For The Occupation



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Form E R1
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Instructions for Making Knowledge Ratings

These questions are about work-related areas of knowledge. **Knowledge areas** are sets of facts and principles needed to address problems and issues that are part of a job. You will be asked about a series of different areas of knowledge and how they relate to workers in the occupation. As an occupation expert, first consider the different knowledge areas needed by workers to perform the occupation. Then, with this information in mind, please answer each question as if you were performing work that is typical of the occupation.

Each knowledge area in this questionnaire is named and defined.

For example:

Economics and Accounting

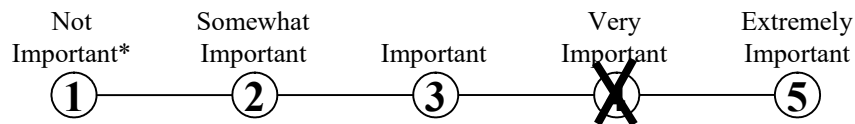
Knowledge of economic and accounting principles and practices, the financial markets, banking, and the analysis and reporting of financial data.

You are then asked two questions about each knowledge area:

A How important is the knowledge area to the performance of the occupation?

For example:

How important is ECONOMICS AND ACCOUNTING knowledge to the performance of the occupation?



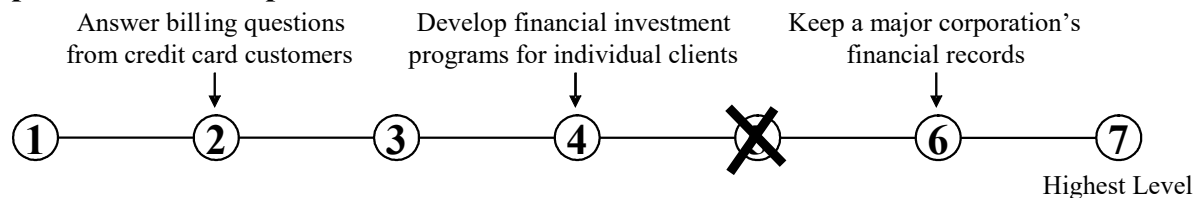
Mark your answer by putting an **X** through the number that represents your answer.
Do not mark on the line between the numbers.

***If you rate the knowledge area as Not Important to the performance of the occupation, mark the one [~~X~~] then skip over question B and proceed to the next knowledge area.**

B What level of the knowledge is needed to perform the occupation?

To help you understand what we mean by level, we provide you with examples of job-related activities at different levels. For example:

What level of ECONOMICS AND ACCOUNTING knowledge is needed to perform the occupation?

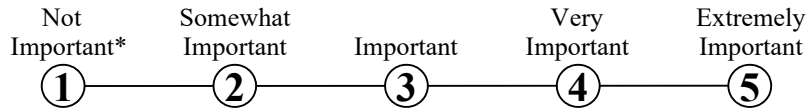


Mark your answer by putting an **X** through the number that represents your answer.
Do not mark on the line between the numbers.

1. Administration and Management

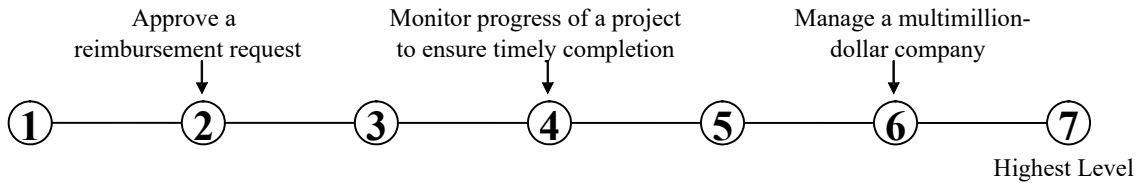
Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

A. How important is ADMINISTRATION AND MANAGEMENT knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

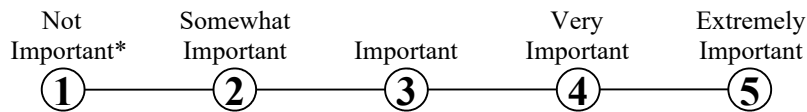
B. What level of ADMINISTRATION AND MANAGEMENT knowledge is needed to perform the occupation?



2. Clerical

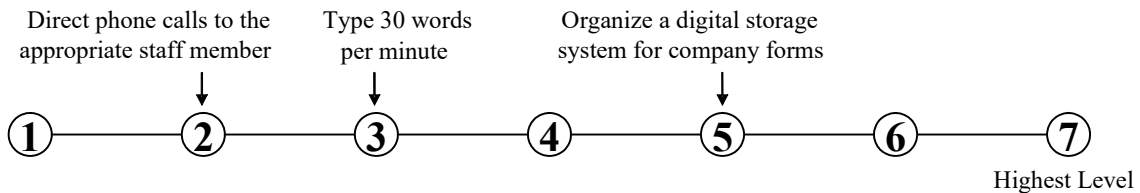
Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

A. How important is CLERICAL knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

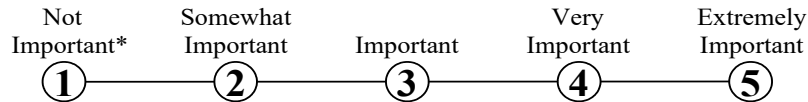
B. What level of CLERICAL knowledge is needed to perform the occupation?



3. Economics and Accounting

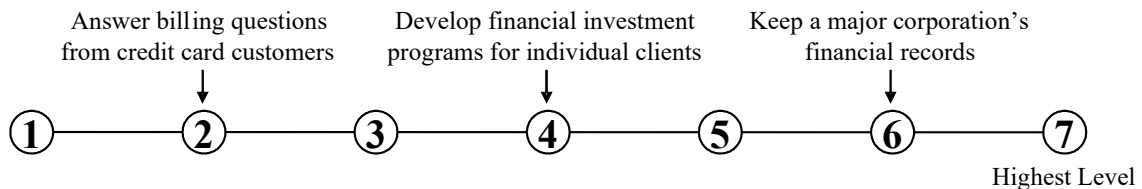
Knowledge of economic and accounting principles and practices, the financial markets, banking, and the analysis and reporting of financial data.

A. How important is ECONOMICS AND ACCOUNTING knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

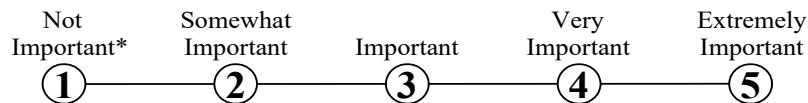
B. What level of ECONOMICS AND ACCOUNTING knowledge is needed to perform the occupation?



4. Sales and Marketing

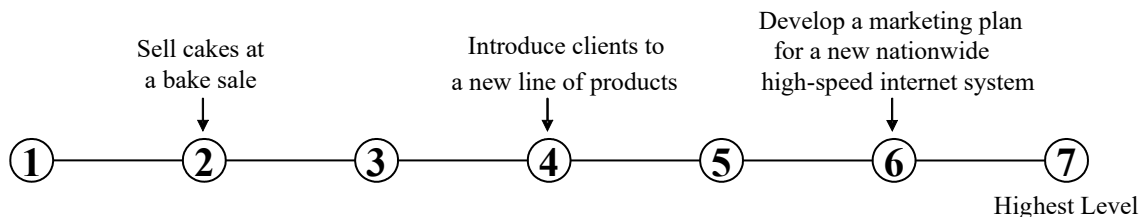
Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

A. How important is SALES AND MARKETING knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

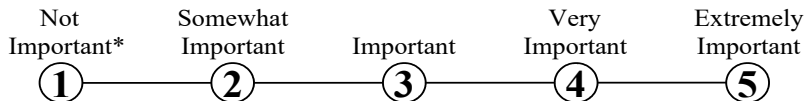
B. What level of SALES AND MARKETING knowledge is needed to perform the occupation?



5. Customer and Personal Service

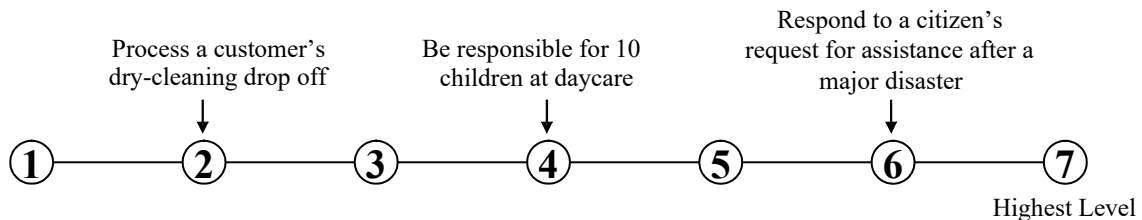
Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

- A. How important is CUSTOMER AND PERSONAL SERVICE knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

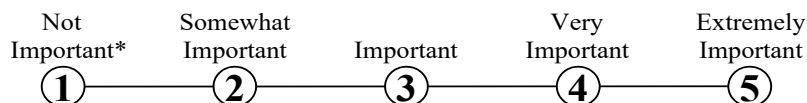
- B. What level of CUSTOMER AND PERSONAL SERVICE knowledge is needed to perform the occupation?



6. Personnel and Human Resources

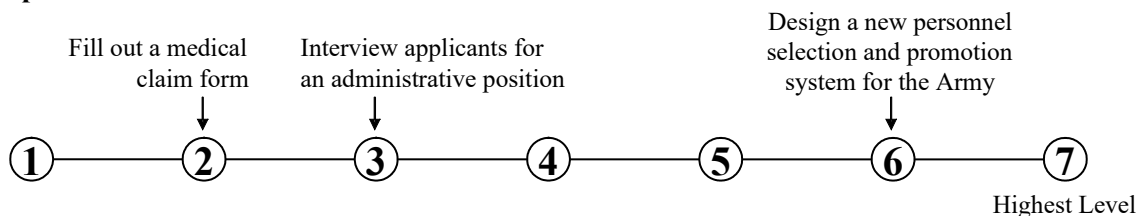
Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

- A. How important is knowledge of PERSONNEL AND HUMAN RESOURCES to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

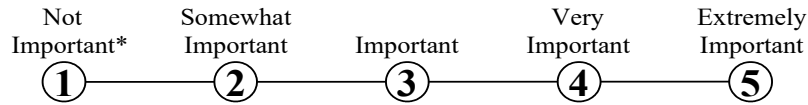
- B. What level of PERSONNEL AND HUMAN RESOURCES knowledge is needed to perform the occupation?



7. Production and Processing

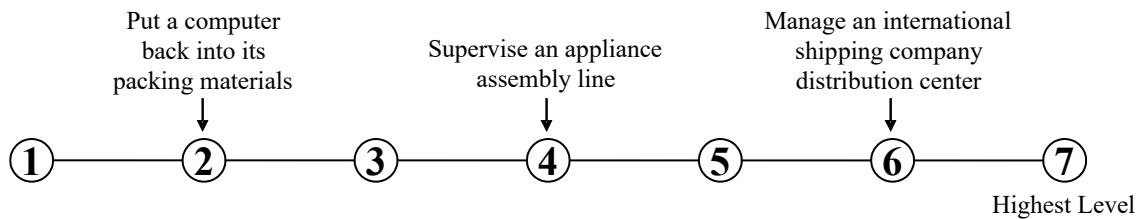
Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

- A. How important is knowledge of PRODUCTION AND PROCESSING to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

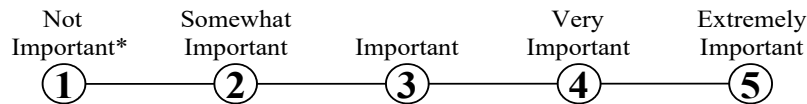
- B. What level of PRODUCTION AND PROCESSING knowledge is needed to perform the occupation?



8. Food Production

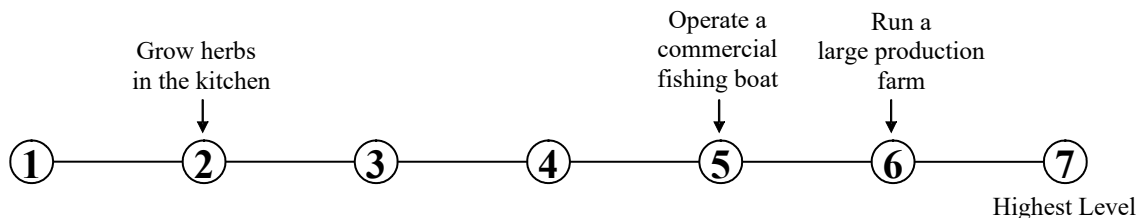
Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.

- A. How important is knowledge of FOOD PRODUCTION to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

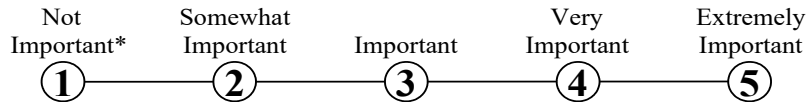
- B. What level of FOOD PRODUCTION knowledge is needed to perform the occupation?



9. Computers and Electronics

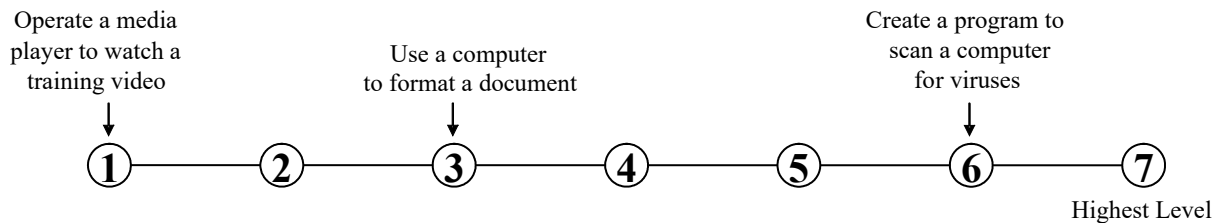
Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

- A. How important is knowledge of COMPUTERS AND ELECTRONICS to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

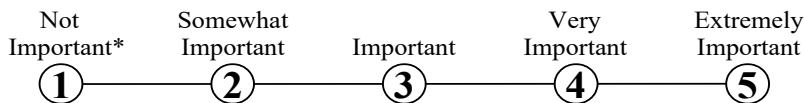
- B. What level of knowledge of COMPUTERS AND ELECTRONICS is needed to perform the occupation?



10. Engineering and Technology

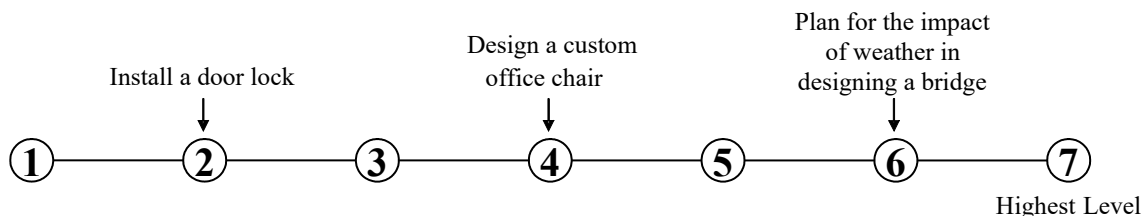
Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

- A. How important is knowledge of ENGINEERING AND TECHNOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

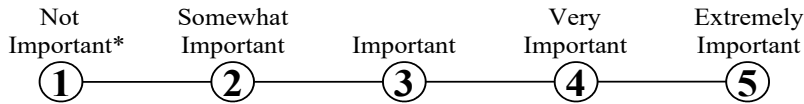
- B. What level of knowledge of ENGINEERING AND TECHNOLOGY is needed to perform the occupation?



11. Design

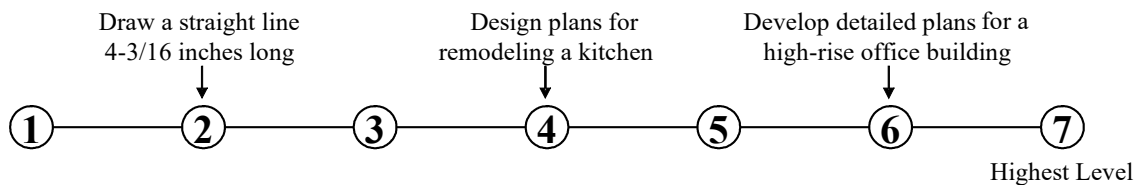
Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

A. How important is knowledge of DESIGN to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

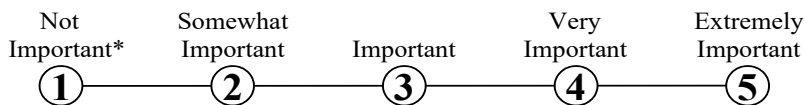
B. What level of knowledge of DESIGN is needed to perform the occupation?



12. Building and Construction

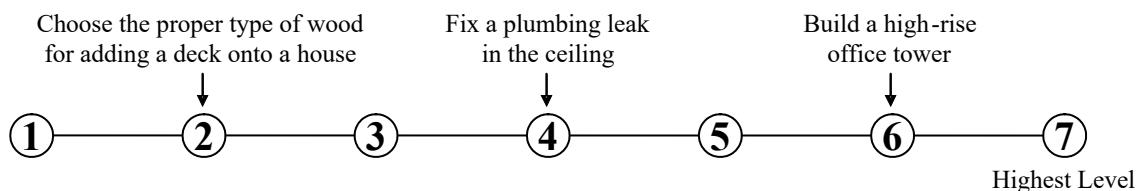
Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

A. How important is knowledge of BUILDING AND CONSTRUCTION to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

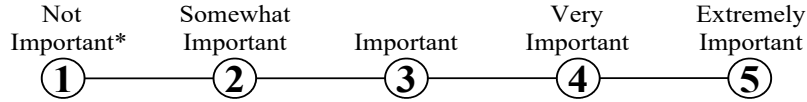
B. What level of BUILDING AND CONSTRUCTION knowledge is needed to perform the occupation?



13. Mechanical

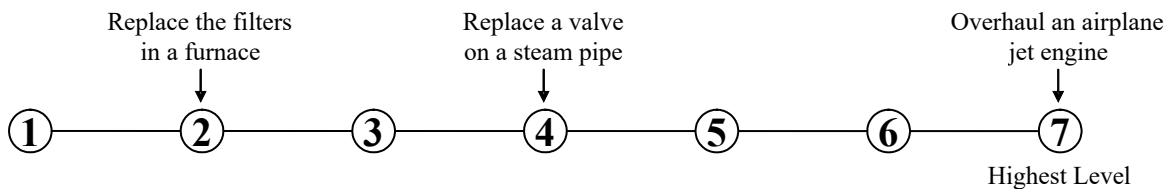
Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

A. How important is MECHANICAL knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

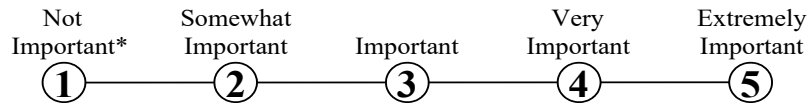
B. What level of MECHANICAL knowledge is needed to perform the occupation?



14. Mathematics

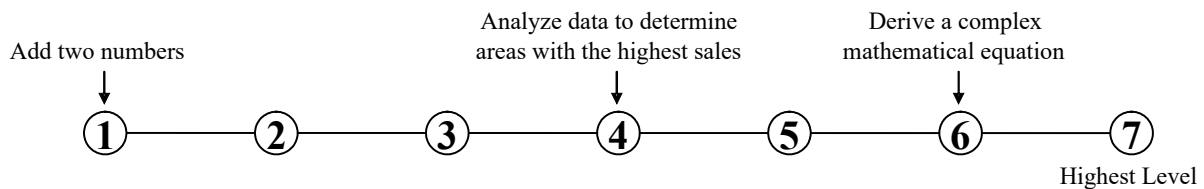
Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

A. How important is knowledge of MATHEMATICS to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

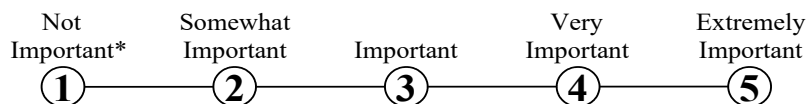
B. What level of knowledge of MATHEMATICS is needed to perform the occupation?



15. Physics

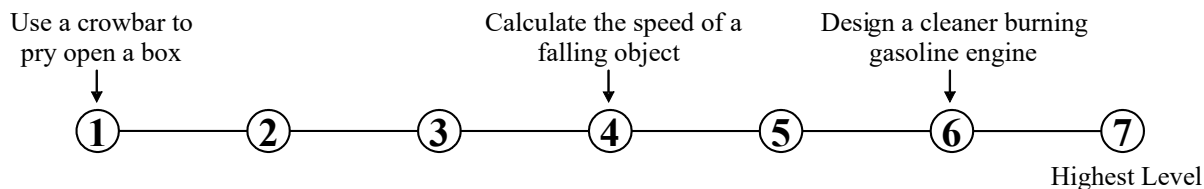
Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

A. How important is knowledge of PHYSICS to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

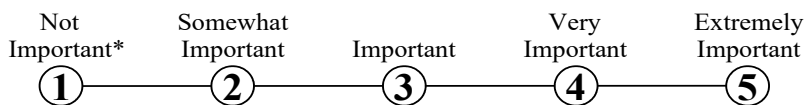
B. What level of PHYSICS knowledge is needed to perform the occupation?



16. Chemistry

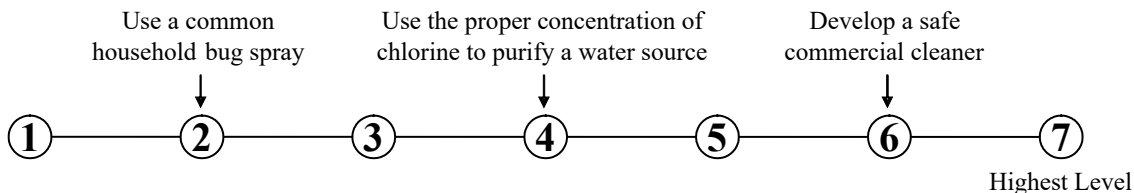
Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

A. How important is knowledge of CHEMISTRY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

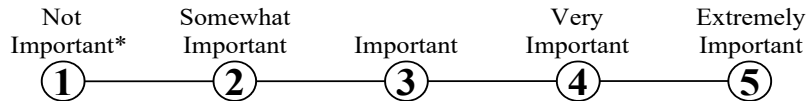
B. What level of CHEMISTRY knowledge is needed to perform the occupation?



17. Biology

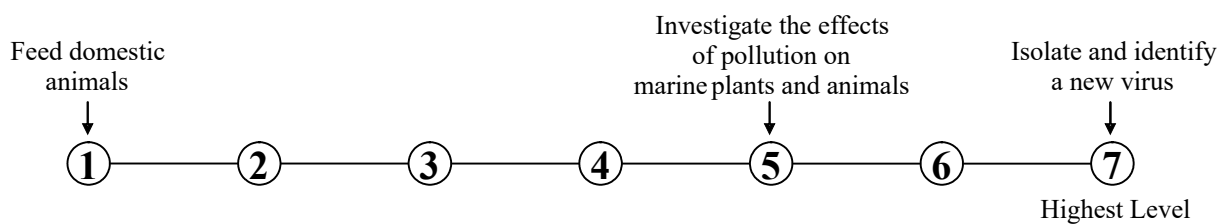
Knowledge of plant and animal organisms and their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

A. How important is knowledge of BIOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

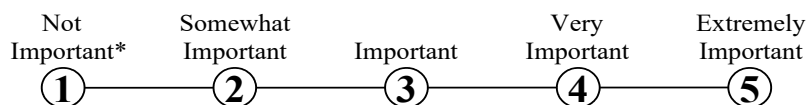
B. What level of BIOLOGY knowledge is needed to perform the occupation?



18. Psychology

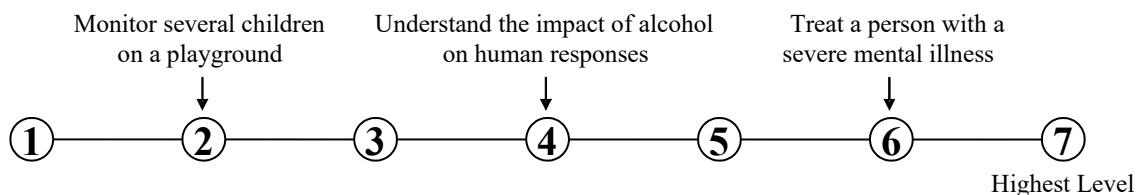
Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

A. How important is knowledge of PSYCHOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

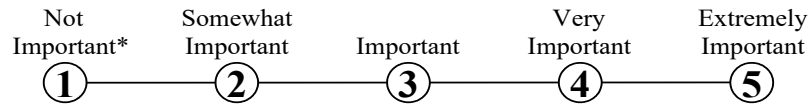
B. What level of PSYCHOLOGY knowledge is needed to perform the occupation?



19. Sociology and Anthropology

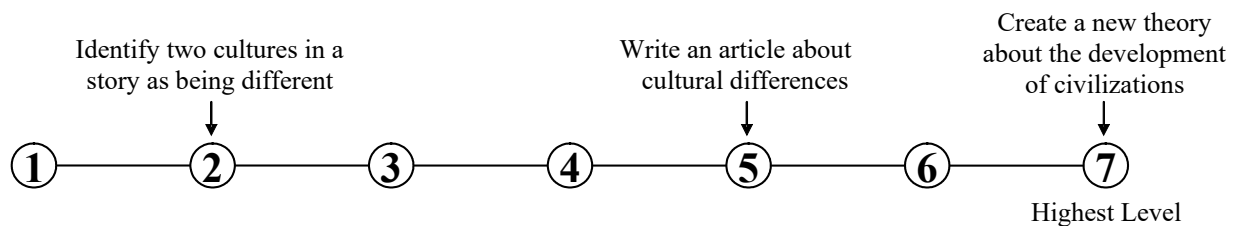
Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures, and their history and origins.

- A. How important is knowledge of SOCIOLOGY AND ANTHROPOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

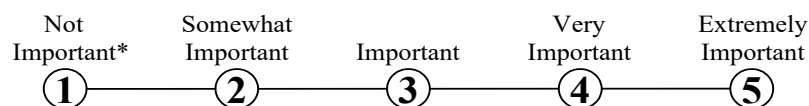
- B. What level of knowledge of SOCIOLOGY AND ANTHROPOLOGY is needed to perform the occupation?



20. Geography

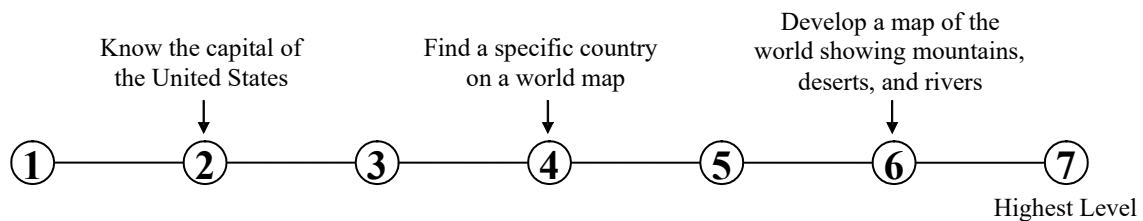
Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

- A. How important is knowledge of GEOGRAPHY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

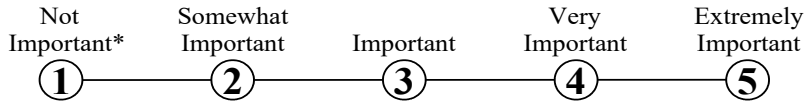
- B. What level of knowledge of GEOGRAPHY is needed to perform the occupation?



21. Medicine and Dentistry

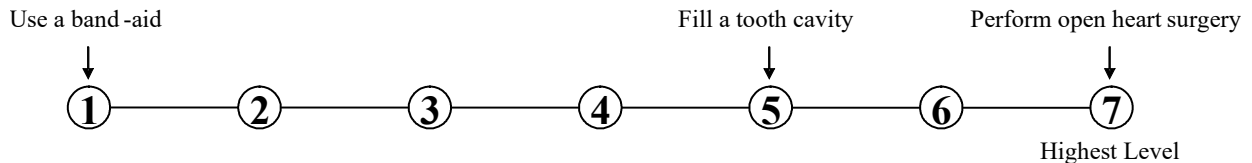
Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

- A. How important is knowledge of MEDICINE AND DENTISTRY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

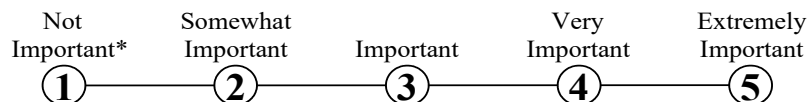
- B. What level of MEDICINE AND DENTISTRY knowledge is needed to perform the occupation?



22. Therapy and Counseling

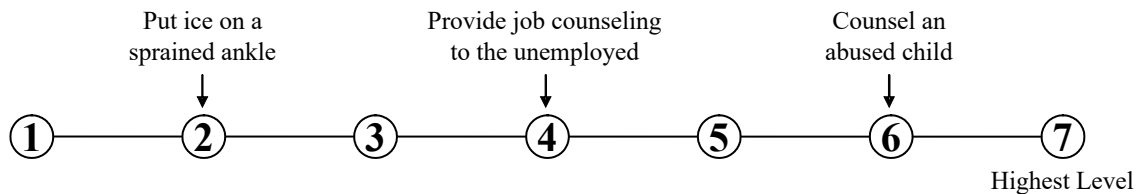
Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

- A. How important is knowledge of THERAPY AND COUNSELING to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

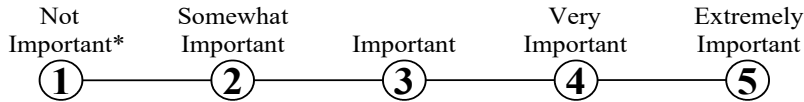
- B. What level of THERAPY AND COUNSELING knowledge is needed to perform the occupation?



23. Education and Training

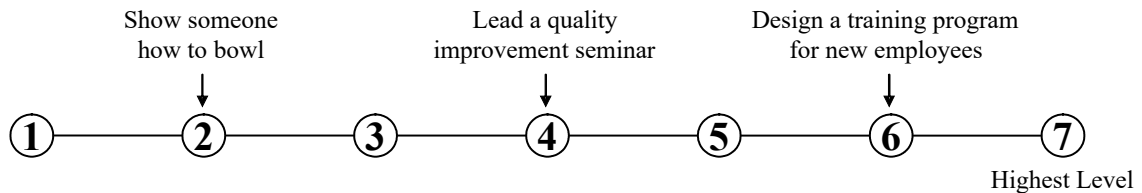
Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

- A. How important is knowledge of EDUCATION AND TRAINING to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

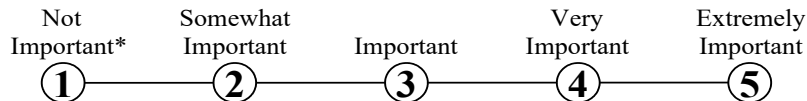
- B. What level of EDUCATION AND TRAINING knowledge is needed to perform the occupation?



24. English Language

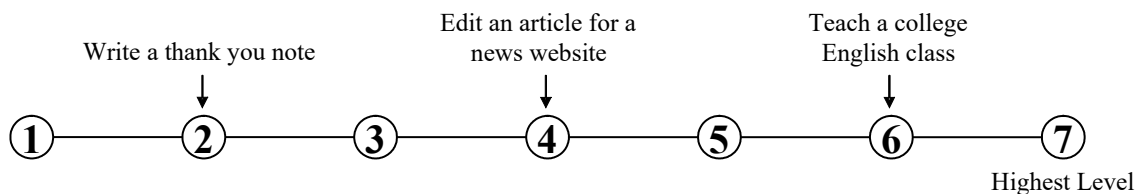
Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

- A. How important is knowledge of the ENGLISH LANGUAGE to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

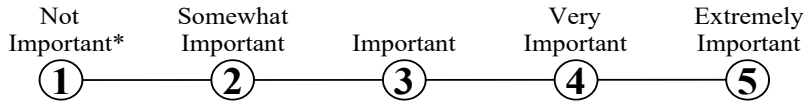
- B. What level of ENGLISH LANGUAGE knowledge is needed to perform the occupation?



25. Foreign Language

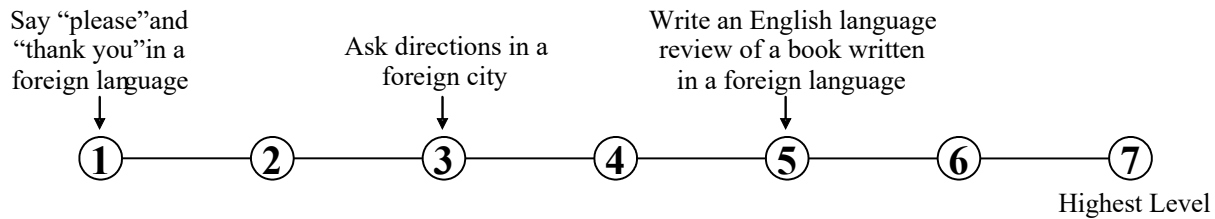
Knowledge of the structure and content of a foreign (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.

A. How important is knowledge of a FOREIGN LANGUAGE to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

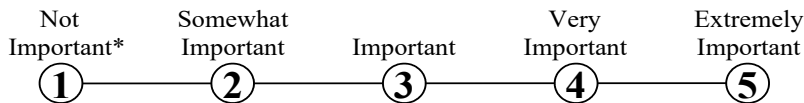
B. What level of FOREIGN LANGUAGE knowledge is needed to perform the occupation?



26. Fine Arts

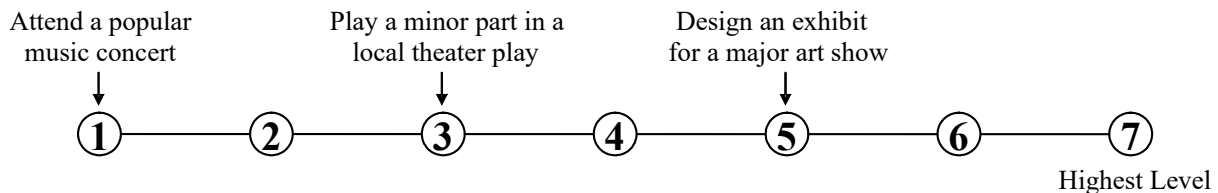
Knowledge of the theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.

A. How important is knowledge of FINE ARTS to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

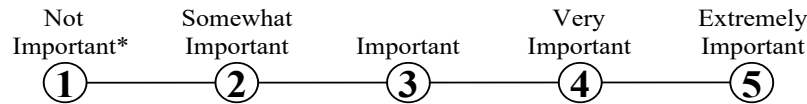
B. What level of FINE ARTS knowledge is needed to perform the occupation?



27. History and Archeology

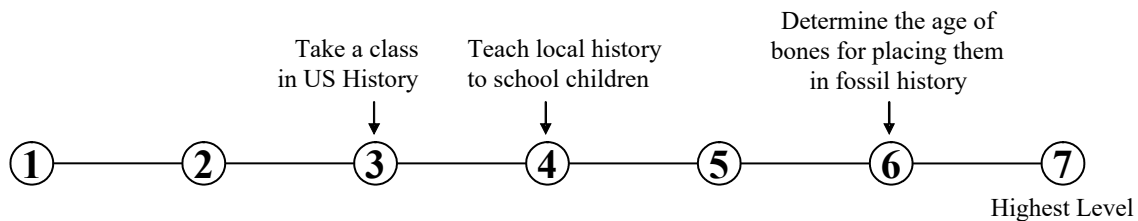
Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.

- A. How important is knowledge of HISTORY AND ARCHEOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

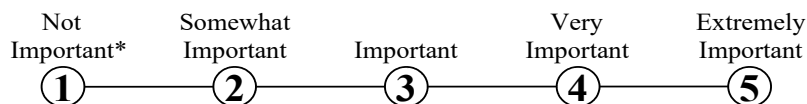
- B. What level of knowledge of HISTORY AND ARCHEOLOGY is needed to perform the occupation?



28. Philosophy and Theology

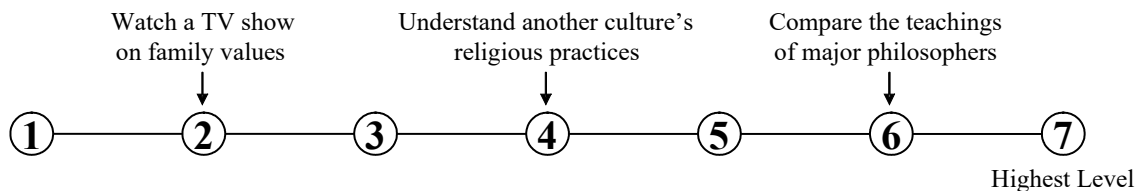
Knowledge of different philosophical systems and religions. This includes their basic principles, values, ethics, ways of thinking, customs, practices, and their impact on human culture.

- A. How important is knowledge of PHILOSOPHY AND THEOLOGY to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

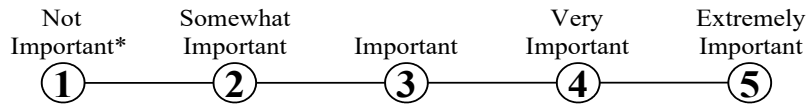
- B. What level of knowledge of PHILOSOPHY AND THEOLOGY is needed to perform the occupation?



29. Public Safety and Security

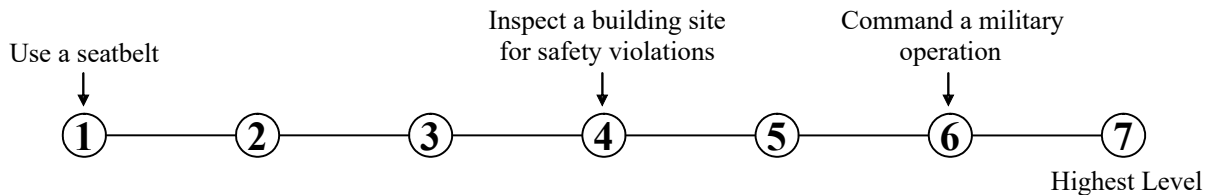
Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

- A. How important is PUBLIC SAFETY AND SECURITY knowledge to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

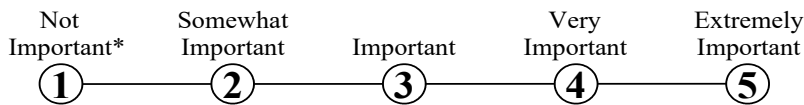
- B. What level of PUBLIC SAFETY AND SECURITY knowledge is needed to perform the occupation?



30. Law and Government

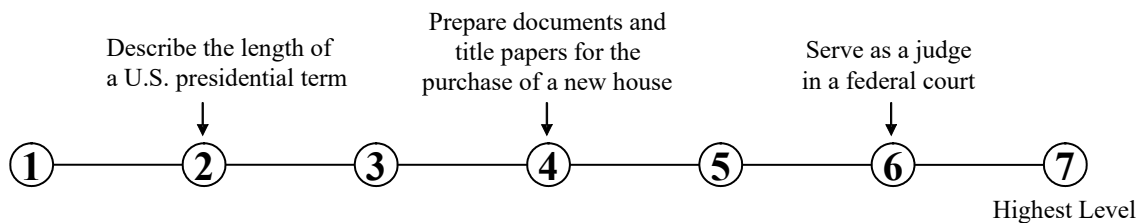
Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

- A. How important is knowledge of LAW AND GOVERNMENT to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

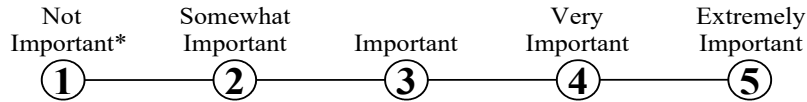
- B. What level of knowledge of LAW AND GOVERNMENT is needed to perform the occupation?



31. Telecommunications

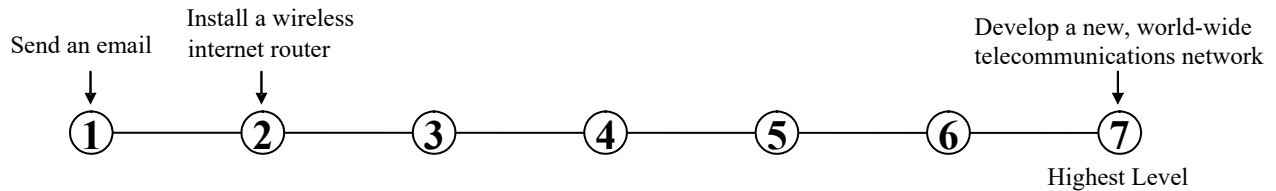
Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

A. How important is knowledge of TELECOMMUNICATIONS to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

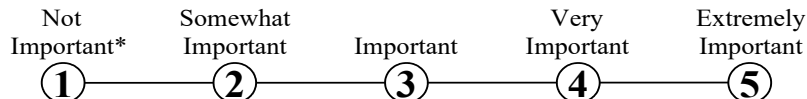
B. What level of TELECOMMUNICATIONS knowledge is needed to perform the occupation?



32. Communications and Media

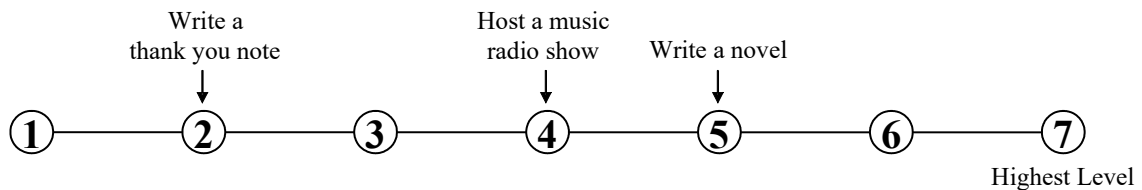
Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

A. How important is knowledge of COMMUNICATIONS AND MEDIA to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

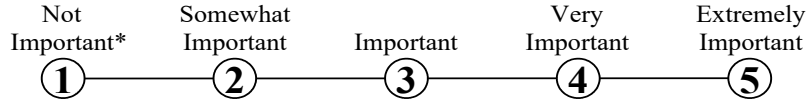
B. What level of COMMUNICATIONS AND MEDIA knowledge is needed to perform the occupation?



33. Transportation

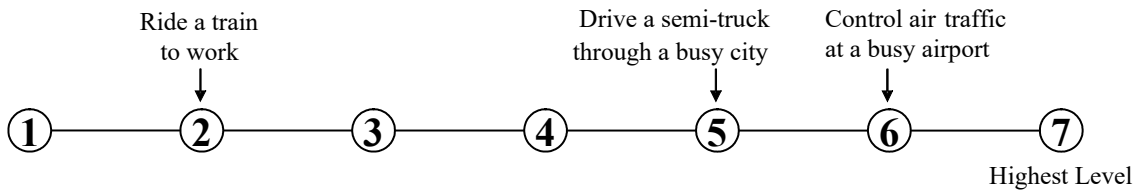
Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.

A. How important is knowledge of TRANSPORTATION to the performance of the occupation?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

B. What level of TRANSPORTATION knowledge is needed to perform the occupation?



PLEASE CONTINUE ON NEXT PAGE

Instructions for Completing Education and Training Questions

In these questions, you are asked about the education and experience requirements for the occupation. Please read each question carefully and mark your answer by putting an **X** in the box beside your one best answer.

REQUIRED LEVEL OF EDUCATION

34. If someone were being hired to perform the occupation, indicate the level of education that would be required (please check only one box):

(Note that this does not mean the level of education that you personally have achieved.)

- Less than a High School Diploma**
- High School Diploma** – or the equivalent (for example, GED)
- Post-Secondary Certificate** - awarded for training completed after high school (for example, in agriculture or natural resources, computer services, personal or culinary services, engineering technologies, healthcare, construction trades, mechanic and repair technologies, or precision production)
- Some College Courses**
- Associate's Degree** (or other 2-year degree)
- Bachelor's Degree**
- Post-Baccalaureate Certificate** - awarded for completion of an organized program of study; designed for people who have completed a Baccalaureate degree but do not meet the requirements of academic degrees carrying the title of Master.
- Master's Degree**
- Post-Master's Certificate** - awarded for completion of an organized program of study; designed for people who have completed a Master's degree but do not meet the requirements of academic degrees at the doctoral level.
- First Professional Degree** - awarded for completion of a program that
 - requires at least 2 years of college work before entrance into the program,
 - includes a total of at least 6 academic years of work to complete, and
 - provides all remaining academic requirements to begin practice in a profession.
- Doctoral Degree**
- Post-Doctoral Training**

35. If someone were being hired to perform the occupation, how much RELATED WORK EXPERIENCE would be required? (That is, having other jobs that prepare the worker for the job.)

- None
- Up to and including 1 month
- Over 1 month, up to and including 3 months
- Over 3 months, up to and including 6 months
- Over 6 months, up to and including 1 year
- Over 1 year, up to and including 2 years
- Over 2 years, up to and including 4 years
- Over 4 years, up to and including 6 years
- Over 6 years, up to and including 8 years
- Over 8 years, up to and including 10 years
- Over 10 years

36. If someone were being hired to perform the occupation, how much ON-SITE OR IN-PLANT TRAINING would be required? (That is, organized classroom study provided by the employer.)

- None
- Up to and including 1 month
- Over 1 month, up to and including 3 months
- Over 3 months, up to and including 6 months
- Over 6 months, up to and including 1 year
- Over 1 year, up to and including 2 years
- Over 2 years, up to and including 4 years
- Over 4 years, up to and including 10 years
- Over 10 years

37. If someone were being hired to perform the occupation, how much ON-THE-JOB TRAINING would be required? (That is, serving as a learner or trainee on the job under instruction of a more experienced worker.)

- None or short demonstration
- Anything beyond short demonstration, up to and including 1 month
- Over 1 month, up to and including 3 months
- Over 3 months, up to and including 6 months
- Over 6 months, up to and including 1 year
- Over 1 year, up to and including 2 years
- Over 2 years, up to and including 4 years
- Over 4 years, up to and including 10 years
- Over 10 years

38. If someone were being hired to perform the occupation, how important would it be to hold a job-related professional certification?

- Not important
- Somewhat important
- Important
- Very important
- Extremely important

39. How important is it to have completed a job-related apprenticeship to successfully perform the occupation?

- Not important
- Somewhat important
- Important
- Very important
- Extremely important

Instructions for Making Work Style Ratings

These questions are about work styles. A **Work Style** is a *personal characteristic*. You will be asked about a series of different work styles and how they relate to the occupation. As an occupation expert, first consider the different work styles needed by workers to perform the occupation. Then, with this information in mind, please answer each question as if you were performing work typical of the occupation.

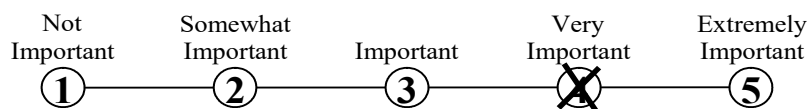
First, each work style is named and defined. For example:

Stress Tolerance

Job requires accepting criticism and dealing calmly and effectively with high-stress situations.

Then you are asked *How important is this characteristic to the performance of the occupation?* For example:

How important is STRESS TOLERANCE to the performance of the occupation?

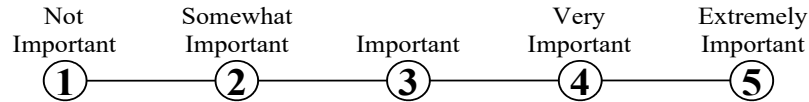


Mark your answer by putting an **X** through the number that represents your answer. Do not mark on the line between the numbers.

40. Achievement/Effort

Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.

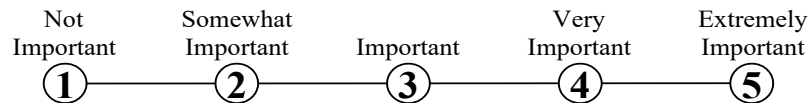
How important is ACHIEVEMENT/EFFORT to the performance of the occupation?



41. Persistence

Job requires persistence in the face of obstacles.

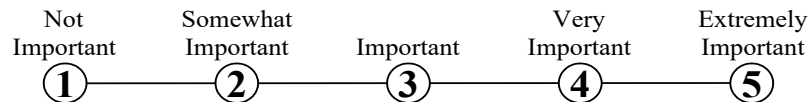
How important is PERSISTENCE to the performance of the occupation?



42. Initiative

Job requires a willingness to take on responsibilities and challenges.

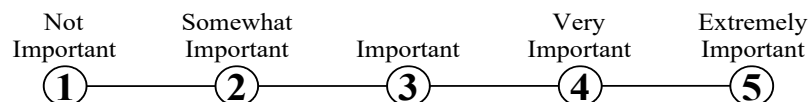
How important is INITIATIVE to the performance of the occupation?



43. Leadership

Job requires a willingness to lead, take charge, and offer opinions and direction.

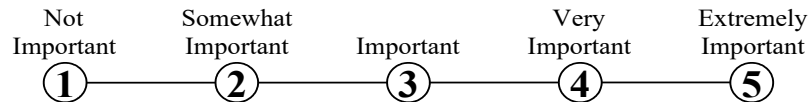
How important is LEADERSHIP to the performance of the occupation?



44. Cooperation

Job requires being pleasant with others and displaying a good-natured, cooperative attitude.

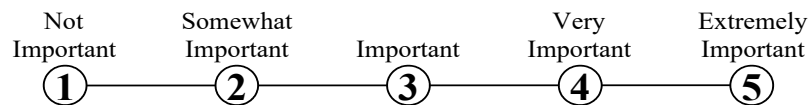
How important is COOPERATION to the performance of the occupation?



45. Concern for Others

Job requires being sensitive to others' needs and feelings, and being understanding and helpful to others.

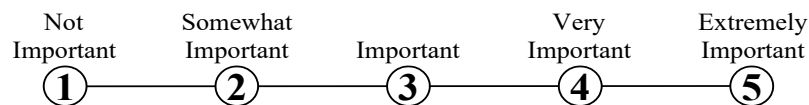
How important is CONCERN FOR OTHERS to the performance of the occupation?



46. Social Orientation

Job requires preferring to work with others rather than alone, and being personally connected with others.

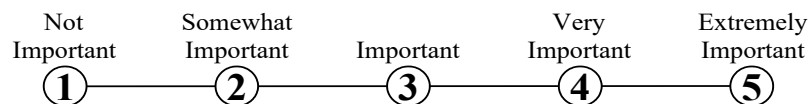
How important is SOCIAL ORIENTATION to the performance of the occupation?



47. Self-Control

Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.

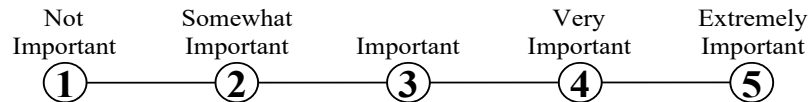
How important is SELF-CONTROL to the performance of the occupation?



48. Stress Tolerance

Job requires accepting criticism and dealing calmly and effectively with high-stress situations.

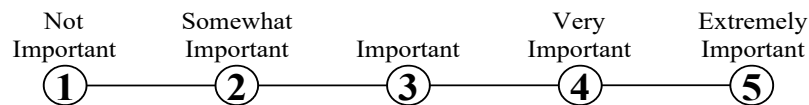
How important is STRESS TOLERANCE to the performance of the occupation?



49. Adaptability/Flexibility

Job requires being open to change (positive or negative) and to considerable variety in the workplace.

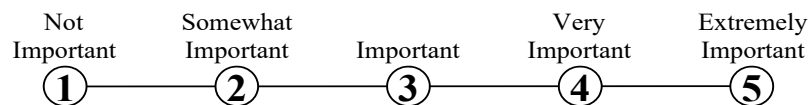
How important is ADAPTABILITY/FLEXIBILITY to the performance of the occupation?



50. Dependability

Job requires being reliable, responsible, and dependable, and fulfilling obligations.

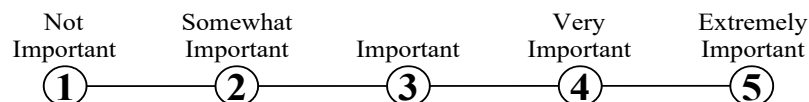
How important is DEPENDABILITY to the performance of the occupation?



51. Attention to Detail

Job requires being careful about details and thorough in completing tasks.

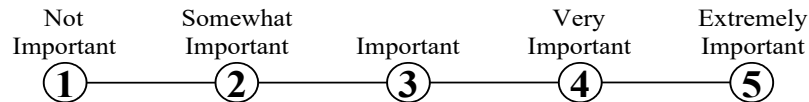
How important is ATTENTION TO DETAIL to the performance of the occupation?



52. Integrity

Job requires being honest and ethical.

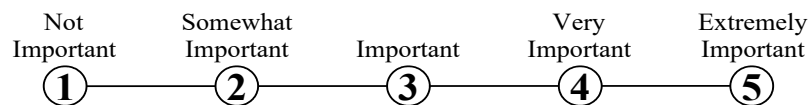
How important is INTEGRITY to the performance of the occupation?



53. Independence

Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

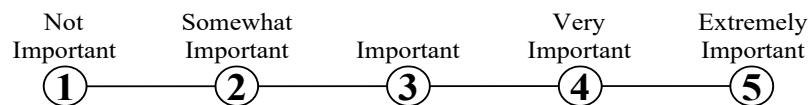
How important is INDEPENDENCE to the performance of the occupation?



54. Innovation

Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems.

How important is INNOVATION to the performance of the occupation?



55. Analytical Thinking

Job requires analyzing information and using logic to address work-related issues and problems.

How important is ANALYTICAL THINKING to the performance of the occupation?

