

Instructor Evaluation

Learner Name: _____ Date: _____

Focus on Learning

Essential Skills					
<input type="checkbox"/> Reading Text	<input type="checkbox"/> Thinking Skills	<input type="checkbox"/> Document Use	<input type="checkbox"/> Working with Others		
<input type="checkbox"/> Writing	<input type="checkbox"/> Computer Use	<input type="checkbox"/> Numeracy	<input type="checkbox"/> Continuous Learning		
<input type="checkbox"/> Oral Communication					
LBS					
Communication:		<input type="checkbox"/> Read with Understanding	<input type="checkbox"/> Write Clearly		
		<input type="checkbox"/> Speaking & Listening Effectively			
Numeracy:		<input type="checkbox"/> Numbers Sense & Computation	<input type="checkbox"/> Measurement		
		<input type="checkbox"/> Solve Geometric Problems	<input type="checkbox"/> Manage Data and Probability		
Self Management / Self Direction:		<input type="checkbox"/> Concentration and Memory	<input type="checkbox"/> Goal-Setting		
		<input type="checkbox"/> Personal Advocacy/Self-Motivation	<input type="checkbox"/> Problem Solving		
		<input type="checkbox"/> Self-Assessment	<input type="checkbox"/> Self-Confidence		
		<input type="checkbox"/> Time Management and Organization	<input type="checkbox"/> Thinking Skills		
		<input type="checkbox"/> Personal Learning Style	<input type="checkbox"/> Working with Others		
Essential Skills & Level	LBS Domain & Level	Task Description	N	S	E
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		•			
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* N - Needs improvement S - Satisfactory E - Excellent

Successfully completed? Yes No

Comments overall: _____

What I Have Learned and Skills Practised

Name: _____ Activity: _____

Essential Skills

<i>Essential Skills</i> Used	Reading Text	Document Use	Writing	Numeracy	Oral Communication	Thinking Skills	Working with Others	Computer Use	Continuous Learning
What I Did									

*Transfer this information to your reflective journal. Find the appropriate skill page, and name the activity that used the skill.

This will become a part of the record you can keep of how you are developing the **Essential Skill**.

What I Have Learned and Skills Practised

Name: _____ Activity: _____

L.B.S.

Skills Used What I Did	Communications			Numeracy				Self-Management & Self-Direction									
	Read with understanding	Writing clearly	Speak & listen effectively	Number sense & computation	Measurement	Solve geometric problems	Manage data & probability	Concentration and memory	Goal-setting	Personal advocacy & self-motivation	Problem solving	Self-assessment	Self-confidence	Thinking Skills	Time management & organization	Personal learning style	Working with others

*Put a check mark in the appropriate boxes

Resource Suggestions

Textbooks

Home Depot's *Home Improvement 1-2-3*. Available at all Home Depot stores (for use in Introductory section)

Websites

NOC classification site www15.hrdc-drhc.gc.ca

The **Essential Skills** Site: http://srv600.hrdc-drhc.gc.ca/esrp/english/general/home_e.shtml

Many businesses and companies have their own websites which can be sources of information and can encourage the learner to develop computer skills in the context of their chosen employment sector.

WHMIS sites: Do a search with WHMIS as the key word. For example

- http://www.hc-sc.gc.ca/ewh-sem/occup-travail/whmis-simdut/index_e.html/
- www.utoronto.ca/safety/WHMIS1.htm
- www.whmis.healthandsafetycentre.org/s/Home/asp

National Fire Protection Association: hazardous materials, safety symbols and warnings (do a search)

- <http://www.ilpi.com/msds/ref/nfpa.html>
- <http://chemlabs.uoregon.edu/Safety/NFPA.html>

Employment helps:

www.careercruising.com: an interactive site to explore career options

www.jobbank.gc.ca: for job postings, resume help, job search techniques, selecting a career, etc.

www.workopolis.com: more complex site for job searching, writing resumes, etc.

Literacy Resources

www.lutherwood.ca/employment: resources for those looking for work and wanting to improve employability. This is specifically for the Waterloo/Wellington area; other areas will have similar services. Training manuals and resources available.

www.alphaplus.ca

Trade/Sector Magazines

Magazines or journals can often augment the Assignments as they relate to specific sectors, and are also sources of further authentic materials.

Community

- Local companies or businesses – ask for copies of documents they use.
- Professional Associations or Trade Unions
- Advertising flyers and brochures – found at many retail counters, etc.
- LBS Network – Your local network (e.g. Project Read) can provide collections of authentic documents and copies of resources from other networks in Ontario (e.g. QUILL, CABS).



COMMUNICATION

Read with Understanding for Various Purposes (LBS) – Reading Text (ES)

Read with Understanding for Various Purposes

Literacy and Basic Skills Levels

Level 1

The reader locates, understands and responds to simple, concrete ideas and sequential information in graphics, sentences, and very short, simple texts about familiar topics. To do this, the reader uses basic reading strategies, personal experience and familiarity with some common forms and conventions of simple texts.

Level 2

The reader locates, understands, and begins to interpret concrete and some inferential meaning in short, uncomplicated texts about familiar topics. To do this, the reader uses various common reading strategies, personal experience, and knowledge, as well as familiarity with some forms and conventions of more format texts.

Level 3

The reader locates, understands, interprets, and makes judgements about ideas and information in a variety of texts that have some complexity of content and form. To do this, the reader uses a variety of more advanced reading strategies, personal experiences and knowledge and a familiarity with a variety of forms and conventions of formal texts.

Level 4

The reader analyzes, synthesizes, makes reasoned judgements, and draws conclusions about ideas, information and the writer's perspective in texts that are complex in form and content. To do this, the reader uses a wide variety of reading strategies, personal experiences and knowledge as well as familiarity with a wider variety of forms and conventions, including some stylistic elements.

Level 5

The reader analyzes, synthesizes, makes reasoned judgements, and draws conclusions about ideas and information, including the writer's perspective and bias, and the use and impact of stylistic devices in texts that are complex in form, content, and style. To do this, the reader uses a wide range of appropriate and efficient strategies, including a deeper application of personal experiences and knowledge and a familiarity with complex forms and conventions, including stylistic conventions.

Essential Skills Complexity Levels

Reading Text

Level 1

Read relatively short texts to locate a single piece of information.
Follow simple written instructions.

Examples:

- *Electrologists* read directions on bottles of sterilant.
- *Pet groomers* read items in supply catalogues and purchasing flyers.
- *Riggers* read brief notices about changes in regulations or load restrictions.

Level 2

Read more complex texts to locate a single piece of information or read simpler texts to locate multiple pieces of information.
Make low-level inferences.

Examples:

- *Kitchen helpers* read safety precautions relating to fire hazards in the kitchen.
- *Bartenders* read recipes for mixed drinks from a variety of bartenders' guides.
- *Security guards* read security incident reports left by the preceding shift.

Level 3

Choose and integrate information from various sources or from several parts of a single text.
Make low-level inferences from multiple sources.
Identify relevant and irrelevant information.

Examples:

- *Painters and sanders* refer to manuals on sandblasting and painting procedures to gain information on how to deal with surfaces of differing porosity and hardness.
- *Branch managers* may refer to several human resource manuals to locate and integrate information on topics such as pay scales and job descriptions.
- *Police dispatchers* read computerized incident reports and relate them to memos and directives from other law enforcement agencies.



COMMUNICATION

Read with Understanding for Various Purposes (LBS) – Use of Documents (ES)



Literacy and Basic Skills Levels

Read with Understanding for Various Purposes				
Level 1	Level 2	Level 3	Level 4	Level 5
The reader locates, understands and responds to simple, concrete ideas and sequential information in graphics, sentences, and very short, simple texts about familiar topics. To do this, the reader uses basic reading strategies, personal experience and familiarity with some common forms and conventions of simple texts.	The reader locates, understands, and begins to interpret concrete and some inferential meaning in short, uncomplicated texts about familiar topics. To do this, the reader uses various common reading strategies, personal experience, and knowledge, as well as familiarity with some forms and conventions of more format texts.	The reader locates, understands, interprets, and makes judgements about ideas and information in a variety of texts that have some complexity of content and form. To do this, the reader uses a variety of more advanced reading strategies, personal experiences and knowledge and a familiarity with a variety of forms and conventions of formal texts.	The reader analyzes, synthesizes, makes reasoned judgements, and draws conclusions about ideas, information and the writer's perspective in texts that are complex in form and content. To do this, the reader uses a wide variety of reading strategies, personal experiences and knowledge as well as familiarity with a wider variety of forms and conventions, including some stylistic elements.	The reader analyzes, synthesizes, makes reasoned judgements, and draws conclusions about ideas and information, including the writer's perspective and bias, and the use and impact of stylistic devices in texts that are complex in form, content, and style. To do this, the reader uses a wide range of appropriate and efficient strategies, including a deeper application of personal experiences and knowledge and a familiarity with complex forms and conventions, including stylistic conventions.

Use of Documents

Level 1		Level 2	
<p>Document Document is very simple. Brief text combined with uncomplicated structure, e.g., simple signs, labels, lists. One document and one document type.</p>	<p>Find and Enter Information Search Limited search using key words, numbers, icons or other visual characteristics (e.g., line, colour, shape) to locate information. Information Entry Entering few pieces of information Thinking Process Minimal inference is required. Information found or entered in the document is a literal match (i.e., identical) to the information required. Information needed is immediate and obvious.</p>	<p>Document Document is simple. Multiple pieces of information. E.g., simple tables (i.e., small subparts). One document or multiple documents of the same type.</p>	<p>Find and Enter Limited knowledge of the content (i.e., substance) of the document may be required to use the information. Limited analysis required. Information found in the document(s) may be rearranged to make simple comparisons. e.g., preparing a list of the top ten sales representatives each month to compare performance. Information available may be rearranged for entry onto the document. E.g., rearrange alphabetically listed contacts into a listing by province. Information found or entered in the document(s) is a synonymous match (i.e., obviously related) to the information required. Information needed is fairly evident.</p>
<p>Use No knowledge of the content (i.e., substance) of the information is required to use the information. No analysis required. Information is used in the form it is found. Information is entered in the form it is found</p>	<p>Use Image, social and other personal consultants may read manufacturers' size charts to match measurements with sizes. Electricians, electrologists, and workers in related occupations may read equipment catalogues when purchasing new equipment. Visiting homemakers, housekeepers, and workers in related occupations read work schedules and assignment sheets to determine work locations, times and duties. Septic tank cleaners use scale drawings to determine the location of septic tanks on residential properties. Workers in dry cleaning, laundry and finishing occupations read colour codes to determine the correct amount of chemicals needed to remove stains. Truck drivers read fuel tables indicating fuel consumption over a certain number of kilometers.</p>	<p>Use Information Search Locating one or more pieces of information using: One or two search criteria (e.g., using menu headings to find vegetarian choices); OR consecutive searches with the same one or two search criteria (e.g., using a phone list to find phone numbers for several people). Entering several pieces of information. Thinking Process A low level of inference is required.</p>	<p>Use Image, social and other personal consultants may read manufacturers' size charts to match measurements with sizes. Electricians, electrologists, and workers in related occupations may read equipment catalogues when purchasing new equipment. Visiting homemakers, housekeepers, and workers in related occupations read work schedules and assignment sheets to determine work locations, times and duties. Septic tank cleaners use scale drawings to determine the location of septic tanks on residential properties. Workers in dry cleaning, laundry and finishing occupations read colour codes to determine the correct amount of chemicals needed to remove stains. Truck drivers read fuel tables indicating fuel consumption over a certain number of kilometers.</p>



COMMUNICATION

Write Clearly to Express Ideas (LBS) – Writing (ES)



Literacy and Basic Skills Levels

Write Clearly to Express Ideas				
Level 1	Level 2	Level 3	Level 4	Level 5
The writer writes for some specific, personally relevant purposes, using a few simple forms and sentences, a familiar vocabulary, and some basic grammar, punctuation, and spelling.	The writer writes for a variety of specific, familiar purposes and audiences, using various simple forms and a basic paragraph structure, with simple support to convey a main idea. The writer uses words and phrases appropriate for the purpose and audience, and basic grammar, punctuation, and spelling.	The writer writes for a variety of specific purposes and audiences, using various forms of some complexity and developed paragraphs to convey a main idea. The writer begins to use an appropriate style for the purpose and audience and common grammar, punctuation, and spelling.	The writer writes for a variety of different purposes and audiences, using a wide variety of complex forms and organizational approaches with appropriate and precise supporting details to convey a main idea. The writer uses a style appropriate for the purpose and audience, as well as more complex grammar, punctuation, and spelling.	The writers writes for a wide variety of different purposes and audiences, using a wide variety of complex forms and organizational approaches with appropriate and precise supporting details to convey a main idea creatively and logically. The writer uses a style that reinforces the purpose and engages the audience, as well as complex grammar, punctuation, and spelling.

Essential Skills Complexity Levels

		Writing				
Dimension		Level 1	Level 2	Level 3	Level 4	Level 5
Length and Purpose of the Writing		Writing that is less than a paragraph. Writing is intended to organize, remind, or inform.	Writing brief text that is a paragraph or longer intended to serve a variety of purposes.	Either longer or shorter pieces of writing intended to inform, explain, request information, express opinions or give directions.	Longer pieces of writing which present considerable information and which may feature a comparison or analysis. Writing task may involve making recommendations.	Longer pieces of writing which present considerable information and which may feature a comparison or analysis. Writing task may involve making recommendations.
Style and Structure		Informal writing for small familiar audiences—usually coworkers. Writing which uses pre-set formats or writing for which the format is unimportant.	Writing with a more formal style for an audience other than co-workers. The writing sets a tone which is appropriate for the occasion, e.g., friendly, respectful, authoritative, etc. Spelling and grammar (syntax) expected. Writing task includes templates or models (e.g., such as memos and letters in set formats).	Writing task has an established format, such as a contract, lease, financial report, or job description. Writing format may call for structural elements such as headings, a table of contents, footnotes, etc.	Conscious organization of writing for a given purpose. Writing may require modification of an existing format, such as a proposal or a report, to fit the given situation. Consideration of the audience may be an important part of the writing task at this level.	Conscious organization of writing for a given purpose. Writing may require modification of an existing format, such as a proposal or a report, to fit the given situation. Consideration of the audience may be an important part of the writing task at this level.
Content of the Writing		Concrete, day-to-day, matters of fairly immediate concern.	Content of writing is routine, with little variation from one instance to the next.	Non-routine writing tasks. The content of the writing may be extensive but it is readily available from established sources.	Writing task may involve the gathering and selection of information. Abstract or technical content may demand the use of specialized vocabulary. Re-write or transform written information for a specific audience, e.g., rewrite technical material for a non-specialist audience.	Writing task may involve the gathering and selection of information. Abstract or technical content may demand the use of specialized vocabulary. Re-write or transform written information for a specific audience, e.g., rewrite technical material for a non-specialist audience.
		Writing that is less than a paragraph, intended to organize, remind, or inform. <ul style="list-style-type: none"> Informal writing for small familiar audiences—usually co-workers. Writing which uses pre-set formats or writing for which format is unimportant. Writing content is concrete, day-to-day, matters of fairly immediate concern. Sample Tasks <ul style="list-style-type: none"> Write reminders to oneself. Enter short comments into communications journals and log books. Write a reminder note to the operator on the next shift. Complete forms requiring only brief written entries. Illustrative Examples <ul style="list-style-type: none"> Couriers write short notes to themselves recording changes to delivery routes. Nurses' aides write brief entries about patient care in the card files. Side boom operators write daily logs using single words and short phrases to describe the condition of their machines. 	Brief text that is a paragraph or longer intended to serve a variety of purposes. <ul style="list-style-type: none"> The writing sets a tone which is appropriate for the occasion, e.g., friendly, respectful, authoritative, etc. Writing has a more formal style for an audience other than co-workers. Content of the writing is routine, with little variation from one instance to the next. Sample Tasks <ul style="list-style-type: none"> Single issue letters to suppliers, customers, or agencies involved in company business. Routine memo advising superior of the budgeted purchase of new equipment. E-mailed request to foreman asking for more paint. Writing letters to public library patrons about overdue books. Illustrative Examples <ul style="list-style-type: none"> Transformer fabricators write memos to suppliers on a weekly basis. Computer salespersons write short letters to customers making quotes on hardware and software choices. Slips' pursers on ferries complete accident report forms to explain collisions of vehicles on car decks. 	Writing task has an established format, such as a contract, lease, financial report, or job description. Writing format may call for structural elements such as headings, a table of contents, footnotes, etc.	Either longer or shorter pieces of writing intended to inform, explain, request information, express opinions or give directions. <ul style="list-style-type: none"> Non-routine memo to supervisor or, to her company, office holder. For example, a memo to the HR Director describing a disciplinary situation. Write letter of understanding which touches on several issues for the caterer at a large wedding. Write article for the company newsletter covering the introduction of new computers in the accounting department. Sample Tasks <ul style="list-style-type: none"> Fashion consultants write laws and letters to modeling agencies and retailers informing them of new customer services. Loan officers document records of loan closures. RICHP-consultants prepare information for search warrants. Illustrative Examples <ul style="list-style-type: none"> Switchboard operators may write evaluations of a number of phone systems and, drawing on their experience, make recommendations to management for purchase options. Bylaw enforcement officers write options and recommendations for proposed bylaw changes. 	Longer pieces of writing which present considerable information and which may feature a comparison or analysis. <ul style="list-style-type: none"> Writing task may involve making recommendations. Writing may require modification of an existing format, such as a proposal or a report, to fit the given information. Sample Tasks <ul style="list-style-type: none"> Write several sections of gas plan operations manual covering start-up and shut-down procedures for cryogenic turbo-expanders and related equipment. Write annual operating report for combined construction materials operation with sand & gravel and asphalt divisions. Illustrative Examples <ul style="list-style-type: none"> Switchboard operators may write evaluations of a number of phone systems and, drawing on their experience, make recommendations to management for purchase options. Bylaw enforcement officers write options and recommendations for proposed bylaw changes.



Literacy and Basic Skills Levels

COMMUNICATION

Speak and Listen Effectively (LBS) - Oral Communication (ES)



Speak and Listen Effectively

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Presenting</p> <ul style="list-style-type: none"> Uses familiar vocabulary and common expressions Presents ideas and information in a sensible order <p>Interacting</p> <ul style="list-style-type: none"> Listens to and contributes to discussions on familiar topics expressing own ideas and opinions and responding to questions and comments Uses basic interaction strategies such as opening and closing conversations, asking questions Recognizes misunderstandings in both formal and informal situations and responds appropriately ("Speak up please," "Can you repeat that?") Observes how some non-verbal communication cues (body language, volume and tone of voice) affect communication (e.g., comments on own responses to different tones of voice) <p>Listening</p> <ul style="list-style-type: none"> Gets the main idea of a simple story or event Reflects on what is heard Retells simple information Uses basic strategies to check 	<p>Presenting</p> <ul style="list-style-type: none"> Uses a wider range of familiar vocabulary to organize, link, and clarify ideas when speaking Presents ideas clearly and in a coherent order and provides more detailed information <p>Interacting</p> <ul style="list-style-type: none"> Listens to others and contributes ideas appropriate to the topic of discussion; expresses ideas and opinions, and provides feedback to others in discussions about familiar topics Uses interaction strategies such as opening and closing conversations, asking questions, and allowing others to speak and waiting for his/her turn (turn-taking) Works to repair misunderstandings in communication (for example, asks for repetition or clarification: "Did you say...?", "Do you mean...?") Uses developing awareness of how non-verbal communication cues (body language, volume and tone of voice) affect communication (e.g., comments on cues from others; tries to use a tone that suits the situation) <p>Listening</p> <ul style="list-style-type: none"> Gets the main idea of a story or an event and reflects on relevant information Retells information containing greater detail Uses basic strategies to check and increase understanding (asks for clarification) 	<p>Presenting</p> <ul style="list-style-type: none"> Uses a wider range of vocabulary and selects words to convey intended meaning Identifies appropriate uses for formal and informal language (knows when to use slang or colloquial language) Speaks clearly in a focused and organized way when presenting information to others on a variety of topics in familiar and unfamiliar situations Considers the audience's interests and needs ahead of time when giving a presentation (how big the group is; what to talk about; how long to talk) Provides specific, detailed information or instructions to familiar and unfamiliar individuals Makes a case to a familiar person (teacher, friend, family) <p>Interacting</p> <ul style="list-style-type: none"> Listens to others and stays on topic in conversations on familiar and unfamiliar topics, responding with feedback to the ideas of others Uses interaction strategies to maintain communication, such as encouraging responses from others, asking questions, and turn-taking Explores strategies for communicating with others in a variety of situations (how to get the information/response that you need in different situations) Repairs misunderstandings in communication to keep discussion going ("I'm not sure I understand...," "What I mean is...") Uses increased awareness of how non-verbal communication cues (body language, volume and tone of voice) affect communication (e.g., identifies cues sent out from self and others as effective or not effective) <p>Listening</p> <ul style="list-style-type: none"> Gets main idea(s) and lists key points of longer forms of oral communication with some unfamiliar aspects Draws conclusions about ideas presented in formal situations Uses strategies to check and increase understanding (takes notes listing unfamiliar vocabulary and key points; replays audio-video tapes; transcribes information from tapes, discusses key points with peers) 	<p>Presenting</p> <ul style="list-style-type: none"> Regularly incorporates a new and varied vocabulary and selects words effectively to convey intended meaning, using comparisons to develop and clarify ideas Uses formal and informal language appropriately Uses transitional expressions to signal a new or important point (My topic is..., Note that..., First..., Second, etc.) Rehearses and revises material before making a presentation (reorders ideas, changes the conclusion) Is aware of the audience while presenting (notifies if people are not listening, responds appropriately) Expresses ideas and opinions confidently, justifying them with details and evidence, facts and examples Makes a case with a clear rationale to a less familiar person <p>Interacting</p> <ul style="list-style-type: none"> Listens and contributes to discussion, follows up on the ideas of others, and recognizes different points of view Uses interaction strategies to facilitate understanding, such as inviting others to contribute, asking questions to clarify a point, and negotiating to find a basis for agreement Is aware of factors (such as social and cultural differences, different dialects and accents in English, different ideas and opinions) that contribute to the success, or lack of success, of a discussion Deals with misunderstandings in communication by asking for and using clarification to sustain communication ("Did you say...?" "What I mean is...") Uses increased awareness of how non-verbal communication cues (body language, volume and tone of voice) affect (e.g., uses effective gestures and facial expressions to enhance communication and maintain interest; tries to monitor own non-verbal habits) <p>Listening</p> <ul style="list-style-type: none"> Identifies the main idea(s) and supporting information; summarizes content of sustained forms of oral communication containing some implicit information and specialized vocabulary Locates information contained in formal talks and presentations Uses more complex strategies to check and increase understanding (takes detailed notes from oral presentations, rewrites notes to help organize) 	<p>Presenting</p> <ul style="list-style-type: none"> Uses an expanded and specialized vocabulary appropriate to the topic and selects words creatively and effectively to convey intended meaning Uses different levels of formal and informal language effectively Responds to audience while presenting and adjusts delivery accordingly (changes pace, asks questions, offers to clarify ideas, asks for feedback from audience) Logically expresses, orders, and develops concepts and ideas and justifies these clearly, supplying appropriate evidence Makes a convincing case with a solid rationale to an unfamiliar person or group <p>Interacting</p> <ul style="list-style-type: none"> Listens to others and contributes collaboratively in discussions by asking questions and building on the ideas of others Uses interaction strategies to facilitate understanding, such as asking others for clarification, repeating and rephrasing own ideas, paraphrasing the ideas of others, negotiating with others to reach agreement, and dealing with communication misunderstandings Works to establish clear purposes and procedures for solving problems, making decisions, and completing projects Analyses factors (such as social and cultural differences, different dialects and accents in English, different ideas and opinions) that contribute to the success, or lack of success, of a discussion Uses increased awareness of how non-verbal communication cues (body language, volume and tone of voice) affect communication (e.g., uses effective gestures and facial expressions to clarify meaning in conversations and to add expressiveness or lack of effectiveness of non-verbal aspect of presentation or speech given by classmate) <p>Listening</p> <ul style="list-style-type: none"> Identifies the main idea(s) and supporting information; summarizes content of sustained forms of oral communication containing implicit information and specialized vocabulary Evaluates overall content and effectiveness of formal speeches and lectures Uses a wider range of complex strategies to confirm and increase understanding (takes notes to organize and classify, checks interpretation with other listeners, does further research)

Essential Skills Complexity Levels

Oral Communication

Level 1			Level 2			Level 3		
Range & Complexity of Communication Functions	Range and complexity of Context	Risk in Failed Intent	Range & Complexity of Communication Functions	Range and Complexity of Context	Risk in Failed Intent	Range & Complexity of Communication Functions	Range and complexity of Context	Risk in Failing Communication Intent
<p>Limited oral communication demands in basic work-related social interaction.</p> <p>Includes: responding to daily inquiries; obtaining specific information; following and giving simple instructions; simple greeting; leaving and receiving short routine recorded messages (answering machine or voice mail); attending routine meetings; co-ordinating work with one or two other individuals</p>	<p>Narrow range of subject matter; familiar topic, one main issue.</p> <p>Language is factual, literal, concrete; narrow range of content and context-specific or technical vocabulary.</p> <p>Information content is simple; limited number of details.</p>	<p>Highly predictable context.</p> <p>Interacting with one person at a time, face to face, on a familiar matter. If communicating on the phone, the exchange follows a routine scenario.</p> <p>Role of the speaker is clearly defined.</p> <p>Common situation, familiar setting process, established format and style to provide and obtain information.</p> <p>Physical context may be used to support verbal communication visually (e.g., by pointing, demonstrating).</p> <p>Exchange is brief (10 minutes or less).</p>	<p>Moderate oral communication demands. Includes: exchanging information; obtaining information by questioning multiple sources; following or giving detailed multi-step instructions; greeting formally; reassuring; comforting; dealing with minor conflict or complaints; leaving and receiving complex recorded messages (answering machine, voice mail, Dictaphone); presenting and discussing simple options and advising on choices; participating in routine meetings; co-ordinating work with several other individuals</p>	<p>Moderate range of subject matter; familiar topics, usually one main issue.</p> <p>Language is both factual or concrete and abstract; moderate range of general and context-specific technical vocabulary and idiom.</p> <p>Information content is moderately complex and detailed; deals mostly with facts but may also deal with emotions and opinions.</p>	<p>Moderate resulting in: Unsuccessful interaction where each particular failure is significant; loss of some money or time; minor hazard; or one-on-one hostility that can be fairly easily terminated.</p>	<p>Extensive oral communication demands in complex work-related social interaction.</p> <p>Includes: providing information; exchanging detailed complex information and opinions; providing or following complex directions and instructions; persuading (e.g., to sell a product or service); resolving non-routine conflict; entertaining (casually or with preparation); advising/counseling (e.g. career employment); assessing/evaluating (e.g. job performance); leading routine meetings; co-ordinating work with and for others.</p>	<p>Significant range of subject matter; professional, organizational, theoretical, social issues.</p> <p>Language can be abstract and conceptual; extensive range of general and technical vocabulary and idiom.</p> <p>Information content is complex and detailed; deals with facts, opinions, emotions; requires ability to organize, present and interpret ideas coherently.</p>	<p>Interacting one-on-one on complex matters, face to face, on the phone. And/or through recorded messages.</p> <p>Giving a presentation to or exchanging information and opinions in a group, face to face or by tele-conferencing; communicating one-on-one on complex matters.</p> <p>Selecting form a significant range of formats and styles of presentation, levels of language complexity, and degrees of formality to communicate a variety of ideas.</p> <p>The individual may have more than one role in the group. Situation and setting may be new and unfamiliar. Audience can be unfamiliar, include authority figures and of extended duration (30 minutes or more). There may be significant noise or other interference.</p>
<ul style="list-style-type: none"> Cashiers greet customers, tell them the total of their bill and respond to their questions about products and hours of operation. Security guards exchange information with incoming staff during the shift change and talk to members of the public when providing access to the building or grounds. Photographic and film processors, interact with customers to take orders and talk with suppliers to order supplies and to check back orders. 	<ul style="list-style-type: none"> Accounting and related clerks speak with customers to follow up on overdue accounts, negotiate payments and discuss disagreements. Dental assistants talk to patients to make them comfortable, instruct them about oral hygiene, explain procedures and clam them when they are experiencing discomfort. Maitres d'hotel and hosts or hostesses provide feedback to servers, resolve disagreements with clients and participate in staff meetings to discuss quality issues. 	<ul style="list-style-type: none"> Quality control technicians in the apparel industry interact with operators to correct work that does not meet quality standards and to persuade them to make changes. At times this involves dealing with hostile reactions. Sign pre-production technicians interact with customers to analyse their requirements, establish objectives and negotiate agreements. They also make presentations to small groups, such as representatives of potential client company. Collectors speak to debtors to explain their amounts owing and determine a plan of action. Debtors may be upset or hostile during this interaction. 						



NUMERACY

Use Number Sense and Computation (LBS)



Literacy and Basic Skills Levels

Whole Numbers, Decimals, and Integers				
<p>Level 1</p> <ul style="list-style-type: none"> Reads and writes numbers from 0 to 100 States the value of coins up to \$2 Uses ordinal numbers (e.g., tenth) Counts 1s, 2s, 5s and 10s to 100 Writes and solves simple addition and subtraction sentences (e.g., $5 + 6 = 11$) Mentally adds one-digit numbers Identifies the effect of zero in addition and subtraction Uses the concepts of addition and subtraction to solve simple, real-life word problems Recognizes, describes, and continues simple number patterns (e.g., counting patterns: 2, 4, 6, 8...) <p>Examples:</p> <ul style="list-style-type: none"> Gives and records telephone numbers and addresses Counts and rolls coins Completes addition chart Given a photo or drawing of the finish line of a foot race, identifies who is first, second, and so on Given a supermarket flyer and a shopping list, locates items and copies prices onto shopping list Given a calendar and the fact that Thanksgiving is the second Monday in October, determines the actual date On drawing of an apartment building's floor plan with some apartment numbers identified, continues to identify apartment numbers Counts by 5 to determine the value of a pile of up to 20 nickels, and discusses this using the word "nickel" (repeat with a pile of up to ten dimes, a pile of up to 50 toonies) 	<p>Level 2</p> <ul style="list-style-type: none"> Reads and writes numbers encountered in everyday life Adds and subtracts multi-digit numbers, with and without regrouping Mentally adds and subtracts one-digit and two-digit numbers Writes and solves multiplication and division sentences (e.g.: $5 \times 6 = 30$) Uses multiplication and division facts and concepts to solve simple, real-life word problems. Estimates costs for making purchases in everyday life Identifies numbers that are divisible by 2, 5, and 10 Recognizes number patterns in addition, subtraction, multiplication, and division facts Recognizes and describes number patterns in which one operation is repeated. (e.g., 1, 2, 4, 8, 16... multiplying by two every time) <p>Examples:</p> <ul style="list-style-type: none"> Fills out cheques Keeps a record of time worked (studied) and mentally calculates daily and weekly totals Estimates the amount of change due when a twenty-dollar bill is used to pay for a purchase of less than twenty dollars Completes multiplication chart Adds fifteen cents tax to every dollar of an item's price (less than ten dollars) to find the total cost Determines the value of a missing term in an addition or subtraction sentence (e.g., $4 + \dots = 13$, $20 - \dots = 8$) Calculates correct dosage from a pill bottle label 	<p>Level 3</p> <ul style="list-style-type: none"> Reads, writes, and compares decimal numbers encountered in everyday life Performs money calculations Makes change using fewest number of coins Adds, subtracts, multiplies, and divides multi-digit whole numbers and decimals Mentally multiplies and divides decimal numbers by 10 and 100 Determines the value of a missing factor in an equation involving multiplication Creates and continues patterns that change according to two alternating rules (e.g., 1, 2, 4, 5, 7, 8, 10... adding 1 to the term, then adding 2 to the term) <p>Examples:</p> <ul style="list-style-type: none"> Given that provincial sales tax and goods and services tax in Ontario add \$1.50 to every \$10.00 of an item's price, mentally calculates tax and total cost of purchases Compares swimmers' times, measured to hundredths, to determine ranking in a race Converts from centimeters, and from millimeters to centimetres or metres Shows that 0.3 and 0.30 (and other similar pairs, e.g., .5 and .50) are equal, using drawings and symbols; shows that 0.03 and 0.3 (and other similar pairs) are not equal, using drawings and symbols Operates a cash register Calculates unit prices and uses them to identify the "best buy" Calculates the gas mileage of a compact car and a truck and compares them Demonstrates equivalence in simple numerical equations using concrete materials, drawings and symbols (e.g., $13 + 7 = 19 + 1$) Novices and explains pattern in carts of life insurance premiums 	<p>Level 4</p> <ul style="list-style-type: none"> Chooses appropriate methods of computation to solve problems (e.g., estimation vs. accurate calculation) Compares and orders integers (e.g., on a number line) Applies the order to operations Adds, subtracts, multiplies and divides integers Uses exponent and square root notations to represent repeated multiplication & to describe perfect squares Performs simple calculations with exponents & square roots Applies the order to operations Extends a pattern, completes a table, and uses appropriate language to explain the pattern Understands that a variable is a symbol that may be replaced by a given set of numbers (e.g., "x" as an unknown number) Translates simple statements into algebraic expressions or equations and vice versa Solves equations of the form $ax = c$ and $ax + b = d$ by inspection and systematic trial, using whole numbers Creates and continues number patterns based on two alternating operations (e.g., $1, 3, 7, 15, 31, \dots$ doubling each term and adding one to get the next term) <p>Examples:</p> <ul style="list-style-type: none"> Given a list of descriptions of situations in which calculations are to be performed, states which ones require exact answers and which ones need only estimates Solves problems involving changing temperatures, above and below zero Given a map of time zones, calculates times and time changes Given the dimensions of different freezers, sketches them and calculates their capacities Given the area of a rectangle, calculates its possible dimensions Given the capacity of a box, calculates its possible dimensions Converts Celsius degrees to Fahrenheit and vice versa 	<p>Level 5</p> <ul style="list-style-type: none"> Demonstrates proficiency in calculations involving rate, exponents, integers, and square roots Mentally divides numbers by 0.1, 0.01, and 0.001 Estimates and uses a calculator to find close approximations for square roots of non-perfect squares Expresses very large, very small numbers using scientific notation Writes an algebraic expression to describe a number pattern Evaluates simple algebraic expressions, with up to three terms, by substituting fractions and decimals for the variables Solves problems involving linear equations and in equations using formal methods Graphs relationships using a variety of methods and technologies <p>Examples:</p> <ul style="list-style-type: none"> Given speed and distance, calculates travel time of a car trip Given time and distance, calculates speed of bike travel Discusses and compares huge distances in space using scientific notation (e.g., Earth is 1,496x10⁹ km from the sun, and Mercury is 5.76x10⁷ from the sun; Which planet is closer to the sun?) Given $25 = 3n + 4$, solves for n Draws the graph of $y = 2x + 3$ Evaluates $7x - 10y + 6z$, given $x = 4$, $y = 3$, $z = 0.75$ Draws a circle, given its area Calculates compound interest Calculates normal blood pressure for different age groups

Literacy and Basic Skills Levels

Fractions, Percents, and Ratios				
<p>Level 1</p> <ul style="list-style-type: none"> Uses the term "half" to describe quantities in everyday situations <p>Examples</p> <ul style="list-style-type: none"> Tells time to the nearest half hour Determines what time a break will be taken, if it is to be taken halfway through a class or a morning of work 	<p>Level 2</p> <ul style="list-style-type: none"> Uses terms for common fractions (halves, thirds, quarters) to describe and measure quantities in everyday life Explains common percent (25%, 50%, 100%) in terms of their relationships to common fractions (quarter, half, whole) <p>Examples</p> <ul style="list-style-type: none"> Uses measuring cup and measuring spoons to measure half of a cup, a cup and a half, a third of a cup, two thirds of a cup, half of a teaspoon, a quarter of a teaspoon, in cooking Measures in half- and quarter-inch increments in crafts Explains the mathematical ideas to support saying "three quarters of an hour" to mean 45 minutes Calculates savings in sales announcing "Everything half price!" "Save one third off our regular low prices" Uses "half", "one quarter", "three quarters", "one third", and "two thirds" to describe how much of a container of food has been eaten and how much is left 	<p>Level 3</p> <ul style="list-style-type: none"> Uses fraction terminology and notation (proper, improper, numerator, denominator, simplify, three-eighths, $\frac{3}{8}$) Expresses fractions represented in diagrams as words & symbols Generates multiples and factors of given numbers in order to find equivalent fractions Compares fractions by rewriting with a common denominator Converts fractions to decimals and vice versa Expresses a fraction with a denominator of 100 as a percent <p>Examples:</p> <ul style="list-style-type: none"> Given jumbled pile of drill bits, puts them back into leveled slots in carrying case—in order from smallest to largest Given labeled boxes of screws, puts them in order from the box containing the longest screws to the box containing the shortest screws (open boxes and compare actual screws to check work) Expresses the remainder of a division problem as a fraction when appropriate Given written instructions in Metric for cutting out paper squares and rectangles of different sizes, but a ruler in inches, converts the measurements and cuts out the shapes Given several mortgage interest rates, ranks them and chooses the lowest Calculates discounts when given a regular price and any percent, by changing the percent to a decimal and multiplying it by the amount using a calculator or pencil and paper 	<p>Level 4</p> <ul style="list-style-type: none"> Adds, subtracts, multiplies, and divides fractions Converts between fractions, decimals and percent Explains the meaning of percent and ratios used in everyday situations Solves simple, real-life problems involving fractions, percent and ratios <p>Examples:</p> <ul style="list-style-type: none"> Given the populations of several Ontario cities, and the number of people in each city who own cars, creates percents to compare the proportions of car owners across the cities Doubles or halves a recipe Mixes oil and gas appropriately for use in a lawn mower Given a regular price and a percent to be discounted, calculates total cost, including provincial sales tax and goods and services tax Makes iced tea from water and iced tea powder by following instructions on iced tea container (not by tasting!) Given a cup of 2% yogurt, calculates how much of a person's daily fat allowance it contains Calculates the income for a salesperson, given their wage and rate of commission Discusses results of opinion polls as reported in the news Uses map scales to calculate actual distances from map distances 	<p>Level 5</p> <ul style="list-style-type: none"> Solves multi-step numerical and word problems involving fractions, decimals, percent and ratios Evaluates algebraic expressions containing fractions, decimals, percent and ratios, using the correct order of operations <p>Examples:</p> <ul style="list-style-type: none"> Draws figures to scale Reads blueprints



NUMERACY

Use Number Sense and Computation (LBS) – Money Math (ES)



Use Number Sense and Computation				
Money Math				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>The learner reads and writes whole numbers to 100, adds and subtracts single-digit whole numbers, and understands the concept of "half". The learner names and states the value of Canadian coins and recognizes, describes, and continues simple number patterns.</p>	<p>The learner reads and writes whole numbers encountered in everyday life and handles money for daily tasks. The learner adds and subtracts multi-digit numbers, multiplies and divides numbers, and uses common fractions to measure and describe. The learner recognizes and describes number patterns in which one operation is repeated.</p>	<p>The learners add, subtract, multiply, and divides whole numbers and decimals; understands the relationship between decimals and fractions; and creates and continues number patterns based on two alternating rules.</p>	<p>The learner adds, subtracts, multiplies and simple calculations with percent, ratio, exponents, and square roots. The learner uses a variable to represent an unknown quantity. The learner creates and continues number patterns based on two alternating operations.</p>	<p>The learner performs a variety of computations in which fractions, decimals, integers, percent, exponents, and square roots may be integrated. The learner creates and solves algebraic equations.</p>
Level 1	Level 2	Level 3	Level 3	
<p>Enter amounts in a cash register. Total simple bills. Make change. Receive payments. Examples:</p> <ul style="list-style-type: none"> • <i>Chip stand operators</i> enter the costs of their customers' orders in cash registers, receive payments and make change. • <i>Clam diggers</i> receive payments upon delivering clams and verify that the distributors' calculations are correct. 	<p>Total accounts/bills including calculations of one of the following: a simple discount, taxes, interest, etc., or including calculations of components charged by a rate, e.g., mileage charge. Approve such bills for payment. Handle foreign currency in a cash transaction. Exchange between currencies, deducting fee. Calculate prices using a formula, e.g., coat price plus % mark up or regular price minus % mark down. Examples:</p> <ul style="list-style-type: none"> • <i>Sewing machine technicians</i> calculate labour charges by multiplying their hourly rate by the number of hours required to repair each sewing machine and finding a total. • <i>Tour directors</i> verify and authorize payments of invoices directly billed to the company for hotel accommodations, food, etc. This involves multiplying the number of people by the unit cost of the room or meal, calculating the applicable taxes and adding up the total. 	<p>Total bill/accounts including calculation of two or more of the following discounts, taxes, interest, etc. or components charged by a rate, e.g., mileage charge. Approve such bills for payment. Prepare pay cheques using rates of pay. Examples:</p> <ul style="list-style-type: none"> • <i>Bank tellers</i> selling safety deposit boxes to senior citizens prorate yearly fees and apply seniors' discounts. • <i>Ticket cargo agents</i> calculate cargo fares of packages that exceed the price scale by considering taxes, insurance rates and discount rates where applicable. 		

Literacy and Basic Skills Levels

Essential Skills Complexity Levels

NUMERACY

Use Number Sense and Computation (LBS) – Scheduling or Budgeting and Accounting (ES)

Literacy and Basic Skills Levels

Use Number Sense and Computation				
<p>Level 1</p> <p>The learner reads and writes whole numbers to 100, adds and subtracts single-digit whole numbers, and understands the concept of "half". The learner names and states the value of Canadian coins and recognizes, describes, and continues simple number patterns.</p>	<p>Level 2</p> <p>The learner reads and writes whole numbers encountered in everyday life and handles money for daily tasks. The learner adds and subtracts multi-digit numbers, multiplies and divides numbers, and uses common fractions to measure and describe. The learner recognizes and describes number patterns in which one operation is repeated.</p>	<p>Level 3</p> <p>The learners add, subtracts, multiplies, and divides whole numbers and decimals; understands the relationship between decimals and fractions; and creates and continues number patterns based on two alternating rules.</p>	<p>Level 4</p> <p>The learner adds, subtracts, multiplies and divides fractions and integers, and performs simple calculations with percent, ratio, exponents, and square roots. The learner uses a variable to represent an unknown quantity. The learner creates and continues number patterns based on two alternating operations.</p>	<p>Level 5</p> <p>The learner performs a variety of computations in which fractions, decimals, integers, percent, exponents, and square roots may be integrated. The learner creates and solves algebraic equations.</p>
Scheduling or Budgeting and Accounting				
<p>Level 1</p> <p>Record costs against categories of budgets. Monitor schedules or budgets reporting overruns and surpluses. Make entries in financial records.</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>Sales associates</i> prepare daily bank deposits and make financial entries in bank deposit forms. • <i>Cashiers</i> reconcile the cash at the end of each shift and report any surpluses or shortfalls. 	<p>Level 2 and 3</p> <p>Determine number of packages to buy based on the number of units required, e.g., how many packages of 30 files should be purchased if 195 files are needed. Determine sizes of work crews required and schedule length of a specific job using established production rates per person. Prepare simple financial summaries.</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>Accounting clerks</i> determine staffing requirements and set staffing schedules using full-time, part-time and relief staff. • <i>Restaurant hostesses</i> prepare revenue counts - financial summaries of the total revenue, number of people served and average bill, and file them with food and beverage managers. 		<p>Level 4</p> <p>Plan and monitor schedules and budgets for small or short-term projects. Audit financial records to determine accuracy and adherence to financial procedures.</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>Senior plant operators</i> plan for annual shutdowns that require co-ordinating work schedules for regular staff and contractors. Three months of planning is required for one week of shutdown. • <i>Chefs</i> establish weekly budgets including costs for food, planning for kitchen staff requirements and costs for special events. 	<p>Level 5</p> <p>Adjust established budgets and schedules to incorporate new information. Compare two options with differing cost structures, e.g., determine the long distance phone service with the best cost for a given phone usage pattern.</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>Riggers</i> schedule crews and equipment at 15 minute intervals, and adjust schedules to accommodate unforeseen lifts and delays. • <i>Maintenance and event technicians</i> review tenders for services and supplies worth over \$150 to determine best values based on prices and quality.

Essential Skills Complexity Levels



NUMERACY

NUMERACY: Use Measurement for Various Purposes (LBS) – NUMERICAL CALCULATION: Measurement and Calculation Math (ES)

Literacy and Basic Skills Levels

Essential Skills Complexity Levels

Use Measurement for Various Purposes				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>The learner measures length, perimeter, area, capacity, mass, time and temperature using non-standard units, and describes measurement attributes using everyday language.</p>	<p>The learner measures length, perimeter, area, capacity, mass, time and temperature using common standard units and describes the relationships among units of measure.</p>	<p>The learner calculates the surface area of prisms, pyramids and cylinders, the volume and surface area of prisms, and the radius, diameter, circumference and area of a circle using formulas.</p>	<p>The learner measures length, capacity, volume, mass, time and temperature with precision using appropriate standard units, and calculates the perimeter and area of rectangles and squares using formulas.</p>	<p>The learner calculates the area of parallelograms, triangles and trapezoids, and the volume and surface area of rectangular prisms using formulas.</p>
Measurement and Calculation Math				
Level 1	Level 2	Level 3	Level 3	Level 3
<p>Take measurements through a one-step process and record the results, e.g., clerk weighs mail and records the results in the mailbox. Measure out quantities, e.g., four gallons of paint. Set instruments to particular angles and other numeric settings.</p> <p>Examples: <i>Postal workers</i> weigh and measure parcels to determine postal rates. <i>Physiotherapy aides</i> adjust settings on physiotherapy equipment when preparing treatment areas for incoming patients. <i>Labourers</i> measure out lengths of pipe using tape measures.</p>	<p>Calculate areas and volumes of simple, familiar shapes. Convert between measurement systems or between units in one system, e.g., inches to millimeters. Calculate and weigh out or measure out quantities or volumes involving doubling, quadrupling, halving, quartering, etc. some given amount or sets of amounts.</p> <p>Examples: <i>Child caregivers</i> measure ingredients when cooking and may have to double or half recipes. <i>Shoppers</i> calculate the number of items on skids by counting the items in a row and multiplying by the total number of rows.</p>	<p>Calculate areas and volumes of simple, familiar shapes. Convert between measurement systems or between units in one system, e.g., inches to millimeters. Calculate and weigh out or measure out quantities or volumes involving doubling, quadrupling, halving, quartering, etc. some given amount or sets of amounts.</p> <p>Examples: <i>Child caregivers</i> measure ingredients when cooking and may have to double or half recipes. <i>Shoppers</i> calculate the number of items on skids by counting the items in a row and multiplying by the total number of rows.</p>	<p>Measure curved and irregular lengths or other dimensions. Calculate areas of shapes that are simple composites of simple, familiar shapes, e.g., composites of rectangles, or rectangles and triangles. Make scale drawings. Take precise measurements using specialized measurement equipment, e.g., depth.</p> <p>Examples: <i>Sewing machine technicians</i> use special gauges to take precise measures of sewing machine components in diagnosing the cause of equipment failure. <i>Maintenance personnel</i> calculate areas of walls, taking account of windows and doors, to ensure that they obtain correct amounts of paint.</p>	<p>Measure curved and irregular lengths or other dimensions. Calculate areas of shapes that are simple composites of simple, familiar shapes, e.g., composites of rectangles, or rectangles and triangles. Make scale drawings. Take precise measurements using specialized measurement equipment, e.g., depth.</p> <p>Examples: <i>Sewing machine technicians</i> use special gauges to take precise measures of sewing machine components in diagnosing the cause of equipment failure. <i>Maintenance personnel</i> calculate areas of walls, taking account of windows and doors, to ensure that they obtain correct amounts of paint.</p>



NUMERACY

Solve Geometric Problems (LBS) – Numeracy (ES)



Literacy and Basic Skills Levels

Essential Skills Complexity Levels

Geometry					
Level 1	The learner identifies, describes, compares and classifies basic two- and three-dimensional figures, and recognizes and creates symmetrical figures	Level 2	The learner identifies, describes, compares and classifies various polygons, prisms and pyramids, and determines lines of symmetry for two-dimensional shapes. The learner identifies and performs transformations.	Level 3	The learner identifies, describes, compares and classifies quadrilaterals and triangles, and identifies and constructs similar, congruent and symmetrical figures. The learner identifies and applies transformations. The learner locates points on maps and grids using a coordinate system.
		Level 4	The learner designs nets for three-dimensional figures, and identifies and constructs two-dimensional shapes that meet certain criteria. The learner applies transformations to create and analyze designs and tiling patterns. The learner locates coordinate points in the first quadrant of a Cartesian plane.	Level 5	The learner describes and applies the angle properties of triangles, and intersecting, parallel and perpendicular lines. The learner constructs circles given center points and points on the circle. The learner solves problems using the Pythagorean relation
Not Specified					



NUMERACY

Manage Data and Probability (LBS) – Data Analysis Math (ES)

Literacy and Basic Skills Levels

Manage Data and Probability				
Level 1	Level 2	Level 3	Level 4	Level 5
The learner collects and sorts a small number of simple data, displays these data on given charts and pictographs, and discusses these displays of data. The learner uses everyday language to discuss probability as part of familiar experience.	The learner conducts surveys using self-generated questions, selects appropriate graphic organizers to sort data, and constructs simple bar graphs to display data. The learner interprets data on graphs and tables, and expresses understanding in a variety of ways. The learner predicts the results of simple probability experiments and carries them out.	The learner designs and carries out experiments to test hypotheses and uses data in databases and spreadsheets to solve problems. The learner explains sampling techniques, and recognizes misuse of data in advertising and news reports. The learner calculates complex probabilities and applies probability in a variety of contexts.	The learner designs and conducts surveys, records results on tally charts and spreadsheets, and displays data on labeled graphs. The learner calculates the mean and mode of a set of data, and identifies the important features of data collected by others. The learner conducts simple probability experiments and uses the results to make decisions.	The learner collects and organizes data from primary and secondary sources, and decides on the best method of display. The learner identifies trends, calculates measures of central tendency, and makes inferences, and convincing arguments based on a variety of displays of data. The learner conducts probability experiments, compares theoretical and actual results, and applies probability in familiar contexts.

Essential Skills Complexity Levels

Data Analysis Math	
Level 1	Level 2
Make simple comparisons such as identifying what is higher or lower, bigger or smaller. Examples: <ul style="list-style-type: none"> Gas utility maintenance workers determine locations of leaks by comparing variations in gas readings at different points. Post office clerks record transactions daily and compare the monthly volume of various kinds of transactions. 	Calculate basic summary measures, e.g., averages. Examples: <ul style="list-style-type: none"> Ferry operators count different kinds of vehicles using the ferry and calculate monthly averages by user group/ Financial advisors calculate average rates of return on investments to prepare financial plans for clients.
Level 1	Level 3
Calculate averages across sets of readings, compare them to acceptable ranges and draw conclusions for such activities as statistical quality control and applying principles of probability. Examples: <ul style="list-style-type: none"> Dieticians calculate average fluids consumed by patients over seven-day periods to recommend adaptations to diets. Bot machine operators perform Statistical Process Control calculations and make adjustments to machines if the data are outside acceptable ranges. They also graph the data each hour. 	Calculate averages across sets of readings, compare them to acceptable ranges and draw conclusions for such activities as statistical quality control and applying principles of probability. Examples: <ul style="list-style-type: none"> Dieticians calculate average fluids consumed by patients over seven-day periods to recommend adaptations to diets. Bot machine operators perform Statistical Process Control calculations and make adjustments to machines if the data are outside acceptable ranges. They also graph the data each hour.



NUMERACY

Numeracy (LBS) – Numeracy: Estimation (ES)

	Numeracy				
	Level 1	Level 2	Level 3	Level 4	Level 5
Literacy and Basic Skills Levels	Estimation is included in all levels				
Solve Geometric Problems					
Use Measurement for Various Purposes					
Manage Data and Probability					
Use Number Sense and Computation					
Essential Skills Complexity Levels	Estimation				
Whether there is a set procedure	Level 1 There is a formula. It identifies the variables and how they are to be combined.	Level 2 There is a formula, but it does not incorporate all of the variables.			
Number of factors comprising the item being estimated	One factor, e.g., estimating a dimension by eyeballing; estimating weight by lifting objects.	A small number of factors.			
Amount of information available	All information about the factors that make up the estimate and how to combine them is known. Any complicating factors are known.	Most information is known, but there are factors that could throw an estimate off.			
Consequence of error	Little or no consequence of error; estimation errors can be easily and quickly rectified with little or no work plan required or costs incurred.	Estimation errors have some minor consequence, e.g., some loss of money or time, but can be rectified with some minor work plan, inconvenience or cost.			
Degree of precision required	Little or no precision required.	Precision required within relatively wide range of values.			

LBS Self-Management & Self-Direction and *Essential Skills*

LBS Skill (OLC level descriptors)	Concentration / Memory Skills	Goal Setting	Personal Advocacy / Self Motivation	Problem Solving	Self Assessment / Self Reflection	Confidence Building Skills	Thinking Skills	Time Management and Organization	Personal Learning Style	Working With Others
Essential Skills										
Reading Text	X			X			X			
Document Use	X			X			X			
Writing	X			X			X			
Oral Communication	X		X	X			X			
Thinking Skills • Problem Solving	X		X	X			X			
• Decision Making	X	X		X			X		X	
• Critical Thinking	X			X	X		X			
• Job Task Planning & Organization	X	X		X			X	X		
• Significant Use of Memory	X			X			X			
• Finding Information	X	X		X			X			
Working with Others	X	X	X	X	X	X	X			X
Computer Use	X	X		X			X			
Continuous Learning	X			X			X		X	

LBS Self-Management and Self-Direction skills may be found in many of the Essential Skills.
This is just a sampling of some of those occurrences.

