Skills for Success proficiency levels development

Final report

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EXECUTIVE SUMMARY

In May 2021, the Skills for Success model was launched to provide a common structure that aligns program and policy transformation with evolving skill and workforce development needs. Along with the skill descriptions, the launch of Skills for Success included preliminary proficiency descriptors; however, it was seen as important to build a stronger evidence base before providing more details (Palameta et al., 2021; Nguyen et al., 2022). This project, *Skills for Success Proficiency Levels Development,* was conceptualized as the first step toward addressing the need for more detailed proficiency levels and descriptions. The project aimed to produce a richer set of conceptual resources on skills proficiency to inform and inspire further work.

The overarching objectives of the project were to further the development of Skills for Success proficiency levels descriptors and provide more details to help practitioners create training programs, curricula, and assessment tools. This project focused on creating proficiency materials primarily for the use of curriculum developers and training practitioners. Practitioners can use the dimensions or difficulty drivers to construct learning scenarios with varying complexity, providing opportunities for learners to practice and apply skills in safe learning environments. Practitioners can also use the proficiency statements to develop rubrics to collect evidence of skills. This can be done as part of learner needs assessment at the beginning of the programs to establish baseline skills assets and gaps. It could also be done at the end of the program to measure learning progress.

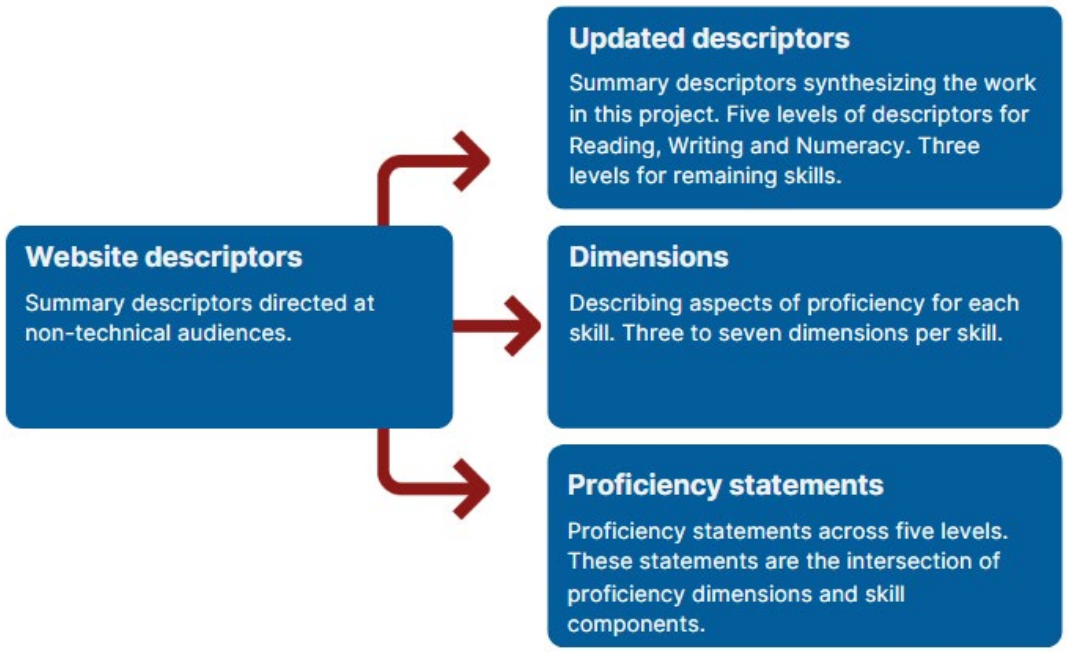
To maximize continuity between the Essential Skills framework and the Skills for Success model, we started by reviewing the Essential Skills proficiency materials. Particularly, the Reader's Guide to Occupational Essential Skills Profiles (Fownes et al., 2010) was a key resource. SRDC also scanned other frameworks that included social-emotional skills, especially Canadian frameworks, national skills frameworks with a similar purpose as Skills for Success, and international assessment frameworks, to align our understanding of proficiency levels with the latest research. Next, we consulted with an Expert Panel of practitioners, assessment developers, and researchers within the skills and employment training ecosystem. The Expert Panel supported SRDC throughout the high-level conceptualization of structure and approach, and provided detailed input to support the revision of multiple drafts of these proficiency materials. The Panel, as well as colleagues from the Skills for Success Program, also recommended key research papers, frameworks, and other resources to inform our work. Additionally, SRDC consulted regularly with the Labour Market Information Directorate (LMID) to ensure the project was developed in a way that was complementary but distinct from related initiatives. In the final iteration, following a suggestion from an Expert Panel member, we applied Artificial Intelligence (AI) to help with the summary and synthesis of key concepts from large bodies of information generated throughout all the project.

With the Expert Panel, we had a robust discussion about the appropriate number of levels for the proficiency descriptors. In the draft proficiency levels presented in the initial launch report, five levels of proficiency were described for the literacy skills (Reading, Writing, Numeracy) and three levels for the remaining skills. In this project, we opted to use a five-level structure for the more detailed, technical materials to provide a richer gradation of proficiency for practitioners, while retaining a three-level structure for the public-facing materials for now to minimize unnecessary disruptions to current users of Skills for Success proficiency descriptors.

We would like to reiterate the role of the current report as a stepping stone toward further work. As previously discussed, this report is intended to supplement existing resources on the Skills for Success website, providing further technical details to inform and inspire training and assessment development.

The key proficiency resources resulting from this project will supplement the existing proficiency descriptors available on the ESDC website, as tools for Skills for Success practitioners (see Figure ES1). The range of resources available providers users the flexibility to choose the level of depth and specificity they would like to engage with, with the reassurance that all materials are linked and interconnected.

Figure ES1 Overview of proficiency resources



INTRODUCTION

BACKGROUND AND RATIONALE

In May 2021, the Skills for Success model was launched to provide a common structure aligning program and policy transformation with evolving skills and workforce development needs in Canada. The model aims to be responsive to the modern labour market, addressing future upskilling and reskilling demands across all sectors. The Social Research and Demonstration Corporation (SRDC) led the project supporting the launch, convening an Expert Panel comprising Canadian and international academic researchers, assessment development experts, and training practitioners to provide recommendations for skill definitions and components (Palameta et al., 2021).

Following the launch, SRDC led the development of an Implementation Guidance to provide Guiding Principles and Promising Practices informing and inspiring the design, delivery, and evaluation of Skills for Success training and assessment (Nguyen et al., 2022). The Guidance aims to ensure resulting Skills for Success programming can address the needs of groups underrepresented in the labour market, while responding to the needs of major sectors. SRDC collaborated with representatives from organizations across the Canadian skills and employment training landscape and consulted with more than 100 employers and practitioners within their networks.

Throughout both initiatives, stakeholders consistently emphasized the need for more details around Skills for Success proficiency. Skills proficiency and associated level descriptors were seen as important tools to inform curriculum and assessment development. Stakeholders highlighted the importance of having conceptually sound and empirically valid markers to describe how a person would demonstrate a particular skill. Skills for Success practitioners could use these proficiency details to build tools to assess individuals' skills; build curricula to facilitate the development and enhancement of skills; and discuss current and targeted skill levels with learners in training programs.

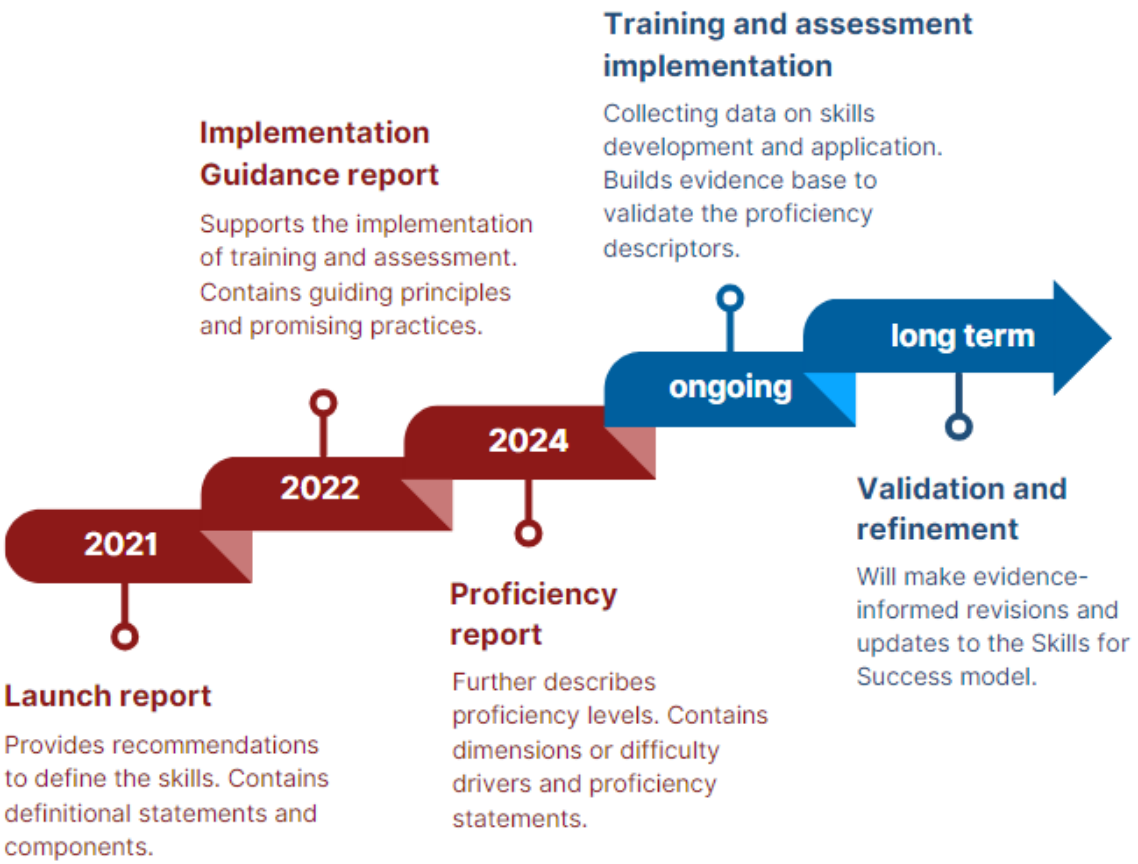
The launch of Skills for Success included some preliminary proficiency descriptors; however, it was seen as important to build a stronger evidence base to provide more details (Palameta et al., 2021; Nguyen et al., 2022). Such details were available to a certain extent within the Essential Skills framework – the predecessor of Skills for Success. Particularly, Reading and Numeracy had an extensive assessment history and commonly used proficiency levels, which could be leveraged and updated to better align with the revised definitions and components in Skills for Success. Social emotional skills such as Collaboration, Communication, Adaptability, and Creativity and Innovation could benefit from more enhanced proficiency descriptions to help facilitate effective training and assessment.

The current project

This project, *Skills for Success Proficiency Levels Development,* was conceptualized as the first step toward addressing the need for more proficiency details. The project aimed to produce a richer set of conceptual resources on skills proficiency to inform and inspire further work. Led by SRDC and funded by the Skills for Success Program, this project consolidated existing knowledge on skills proficiency in Canada and international jurisdictions, adding more depth to the conceptualization of Skills for Success proficiency that was developed prior to its launch. In the current project, we aimed to set a strong foundation upon which further work can emerge to support the continuation of Skills for Success implementation.

In Figure 1, we attempt to situate the current project within the broader Skills for Success landscape, showing the previous work leading to this project while providing a longer-term, forward-looking view of what this report can potentially inspire in the future.

Figure 1 **Situating the current Proficiency Levels Development Report within previous and future Skills for Success initiatives and resources**



As shown in Figure 1, this project continued the developmental work following the launch of Skills for Success. Project outputs, presented in later report sections, intended to provide a more solid conceptual starting point for practitioners to continue training and assessment design and delivery. As part of these ongoing initiatives, it would be beneficial to collect evidence of skills development to validate, refute and refine the conceptual thinking. It is important to accumulate data to build an evidence base of Skills for Success proficiency levels, applicable to a wide range of learning and assessment contexts, aligned with the unique learning needs and lived experience of diverse learners and assessment users. In the longer term, opportunities to systematically synthesize all evidence, drawing common themes and examining unique implications, would be beneficial to revise and refine details around skills proficiency, iterating toward a stronger understanding around skills acquisition and progression.

The materials provided in this report are considered a starting point based on the current evidence around Skills for Success and the recommendations of expert early adopters, and should be refined as more evidence emerges.

Adaptation of the materials to align with the needs of diverse training contexts and learner groups is encouraged.

This approach would align with the recommendations outlined in the report supporting the launch of Skills for Success (Palameta et al., 2021). In this report, we recommended an iterative, evidence-based process to develop and finalize proficiency level descriptors. This process would involve multiple iterations starting with a conceptual design; a pilot that collects evidence of skills progression throughout training initiatives using assessment tools informed by the conceptual design; a review of the data to ensure alignment with realistic work, learning, and life contexts; and a synthesis of all conceptual and empirical findings to inform proficiency refinement and finalization. The proficiency level descriptors and associated tools included in this report could be considered as further work in the design phase. We aimed to generate more proficiency information based on existing knowledge. As assessments and curricula aligned with Skills for Success are developed, pilot testing of the resources is encouraged to inform revisions to the proficiency level descriptors. Further work to validate these proficiency materials with diverse learner groups and sectoral needs is also recommended, to create alignment of competency demands and the proficiency statements. As emphasized by stakeholders, finalization of the proficiency tools must be evidence-based and conducted through a collaborative process involving both training practitioners and assessment developers.

Overall, the current project set out to add more tools and resources around Skills for Success proficiency levels, leveraging existing knowledge and expertise in the field while inviting further data collection to inform validation and refinement. We would like to reiterate the role of the current report as a stepping stone toward further work – while we made the best effort to synthesize existing resources and consult with diverse subject matter experts, we recognized that the current conceptualization of skills proficiency would by no mean be the definitive take on the

topic. Further work would be needed to ensure the model could continue to be grounded in data and evidence, with the ultimate goal to support the skills development and workforce development goals of Canada overall.

OBJECTIVES

The overarching objectives of the project were to further the development of the Skills for Success proficiency levels descriptors and provide more detailed support to practitioners to create training programs, curricula, and assessment tools. The current project aimed to enrich the early and preliminary proficiency descriptors outlined as part of the launch of Skills for Success. The proficiency materials developed through this project were meant to inform further training and assessment design and implementation, and to inspire more data collection and validation.

METHODOLOGIES

Members of the Expert Panel

SRDC convened an Expert Panel of Canadian and international academic researchers, assessment developers, curriculum developers, education and training practitioners, and workforce development experts to work toward this objective. Members of the Expert Panel are as follows:

- Angela Briscoe from United for Literacy
- Krista Medhurst and Alisa Foreman from Bow Valley College
- Lee Lagan from SkillPlan
- Marie-Christine Gill, Consultante CPR et Appui personnalisé, SFS and Personal Support Consultant
- Melwyn D'Costa and Susan Christensen from Ontario Tourism Education Corporation
- Michael Herzog from the Essential Skills Group Inc.
- Michel Simard, DESS, Expert in essential skills
- Pam Tetarenko, Danica Isherwood, Marina Dyakonova, Julia Lewis from Douglas College
- Richard Roberts from Research and Assessment Design: Science Solution
- Scott Murray from DataAngel Policy Research Inc.

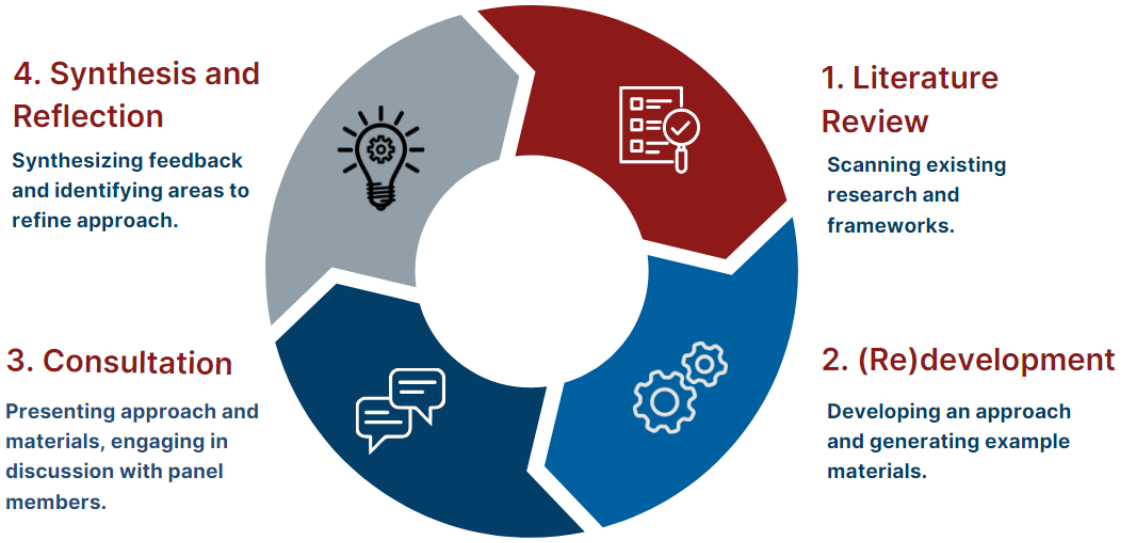
SRDC also consulted regularly with the Labour Market Information Directorate (LMID) to ensure the project was developed in a way that was complementary but distinct from related initiatives. Specifically, the LMID was developing the Occupational and Skills Information System (OaSIS), a database that measures 241 competencies across 900 occupations, aligned with the National Occupation Classification (NOC) system and the Skills and Competencies Taxonomy (SCT). While the two projects had related purposes, they were developed with different methodologies, frameworks, and priorities. OaSIS explicitly and directly describes the world of work and occupations, while Skills for Success is meant to apply more broadly to help individuals thrive in community, learning, and work. The intended primary users of each tool are different, but with some overlap. The consultations aimed to explore interoperability or complimentary use between the two tools to the extent possible while maximizing the value of each (see Appendix A for more information).

Approach and activities

An iterative development approach was implemented to structure the consultations with stakeholders. Members of the Expert Panel were actively engaged in providing feedback on the development process (i.e., the proposed approach and structure) as well as the products (i.e., proficiency content). To make efficient use of the Panel's time, SRDC engaged in background research to develop preliminary content that was then presented to the Panel for their discussion, input, and feedback. With SRDC taking the lead on scanning and synthesizing resources, experts on the Panel could focus their efforts on critical analysis and review.

Three rounds of iterative development were conducted (see Figure 2). In each round, SRDC first conducted a targeted literature review and scan of existing resources. This was followed by the development or redevelopment of an approach, format, and structure for the proficiency tools and example materials for several skills. The approach and draft proficiency materials were then presented to the Panel, and feedback was collected through a series of group and individual consultations. Finally, SRDC synthesized feedback and identified areas for further research and revision to inform the next round of development.

Figure 2 Iterative development process



The details of each step of the iterative review process are summarized below and described in more detail in subsequent sections.

1. **Literature review and scan:** In the first round of development, SRDC conducted a literature review and environmental scan of Canadian and international frameworks to inform our work. This included an intensive review of the Essential Skills Profiles from the Essential Skills framework and a targeted scan of other more current frameworks to identify skill components, dimensions, and proficiencies pertinent for the modernized labour market. As recommended by Panel members, in subsequent rounds, SRDC consulted a range of resources and proficiency frameworks, including recently published work on Digital skills from the Bow Valley College team, the Quebec Future Skills Reference Framework, the OECD Survey of Social and Emotional Skills, the Skills Builder Universal Framework from the United Kingdom, the Future Critical Core Skills framework from Singapore, the Programme for the International Assessment of Adult Competencies (PIAAC) Cycle 2 assessment of Adaptive Problem Solving, the Program for International Student Assessment (PISA) 2022 on Creative Thinking.
2. **(Re)development**: The first round of development of proficiency statements and their structure was informed by the literature review and scan, and priorities that emerged from discussions with the Skills for Success Program and the LMID. For each round of development, SRDC team members generated a proposed structure with draft proficiency materials that were reviewed by Panel members. This process itself was iterative and included extensive internal discussions, review of resources, and testing and refinement of approaches. This work was documented in preliminary and interim reports for Panel

members, which included a summary of any research or previous feedback, description of the development process and how it addressed feedback, and the revised new proficiency structure and materials. These reports sometimes included reflection questions to help structure feedback.

3. **Consultation:** Panel members attended an introductory conference call during which the SRDC team and representatives from the Skills for Success Program shared the project's goal and objective. It was also an opportunity to clarify expectations of what could feasibly be developed or addressed within the scope of the project, shaping the Panel's feedback and recommendations. Panel members then participated in three conference calls over the three cycles, during which SRDC presented a new or revised approach and example proficiency statements generated from that approach. During the calls, members had the opportunity to provide feedback and share their reflections in both large group and small group discussions. Prior to each call, Panel members received a workbook and were invited to provide written feedback or to meet with SRDC staff for individual or group interviews. Fourteen of the 16 panel members participated in interviews, and nine pieces of written feedback were submitted.

Consultations

- **One** introductory conference call
- **Three** engagement and discussion conference calls
- **Nine** interviews with **14** practitioners
- **Nine** written feedback submissions

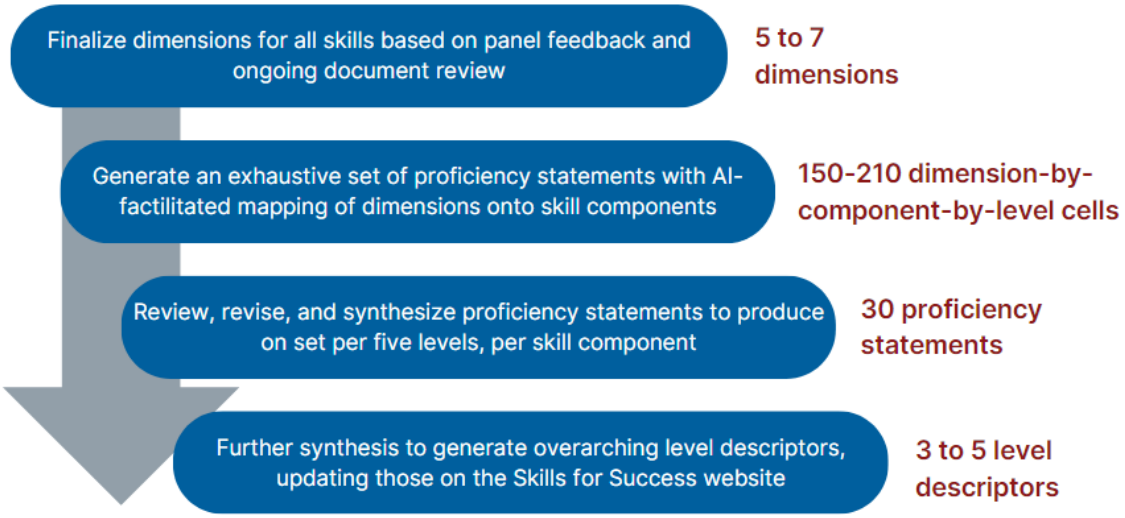
4. **Synthesis and reflection:** After each conference call and feedback, SRDC analyzed and synthesized feedback to identify common themes that could inform revisions. Lessons learned and areas for improvement were identified. The synthesis informed the start of a new round of revision, including a plan to revisit previous resources with new perspectives, reviewing new resources or tools recommended by Panel members, and identifying further resources as needed (i.e., returning to the literature review and scan stage).

In the final iteration, following a suggestion from an Expert Panel member, we used AI to help with the summary and synthesis of key concepts from large bodies of information generated throughout all other project activities. Two researchers engaged with AI in this process, with one developing prompts and providing input that we got from the literature review and the consultations with the Panel through AI, and another going through the summary and synthesis manually. We then compared the AI-generated and human-generated outputs and review for quality and completeness. In general, we found that the two sets of outputs were largely consistent. AI generated some new content areas that we had missed, as well as some irrelevant content areas that we rejected. We found that while AI sped up the process, the content still needed careful reviews by the research team to maximize usability, relevance, and applicability.

Panel members provided positive feedback on the use of AI for the project, reflecting that AI can be useful to synthesize information and support brainstorming. In the words of one Panel member, "I thought it was a really great approach and I could appreciate that you still had a lot of work to go through after the fact, but I thought it was a really great way to get things going." After successfully testing the approach with one skill, we standardized the process and used AI as a supportive tool to generate the proficiency descriptors for all nine skills. This included developing standardized prompts and input processes to provide AI with information we accumulated throughout the project, and creating guidelines to support consistent editing and review of the draft outputs generated. Figure 3 summarizes this process.

> *"Remember, when you use AI, you're providing your own language and guiding the process. It's a legitimate tool to help you work more efficiently."*
> - Panel member

Figure 3 Process to develop the proficiency materials



First, the research team summarized the findings from the literature review and the consultations with the Panel to develop three to seven dimensions for each of the nine Skills. We developed specific statements describing each dimension at each of the five levels.

We then inputted these dimensions along with each of the six skill components into AI and asked it to map the dimensions onto the components. AI then generated large matrices showing specific mapping of each dimension by each component, for each of the five levels. These matrices range from 150 to 210 cells depending on the number of dimensions per skill.

Next, we asked AI to produce a synthesis of these cells, producing 30 proficiency statements for each of the nine skills. For each level, these proficiency statements summarized the content across dimensions for each component. We then reviewed and edited these proficiency statements to ensure they covered the key concepts as intended and made practical sense.

Finally, we summarized across levels and components to produce the overarching level descriptors that would help update the ones currently shown on the Skills for Success website.

Using AI as a supportive resource

Artificial intelligence (AI) has emerged as a resource that can be applied to support work in many occupations and sectors. When applied to research work, there are a series of concerns and cautions that need to be taken when using AI, including: the need to fact-check information and sources, the potential inclusion of biased or inaccurate information, and caution related to data privacy and intellectual property.

In this project, AI was used as a tool to synthesize large quantities of information from trusted sources. The content entered into AI tools was developed through manual review. Similarly, the content produced by AI was put through a manual review process: selected outputs were identified as useful or relevant and then heavily adapted, edited and refined before use.

THE CURRENT REPORT

Structure

This technical report provides further details on the proficiency levels and presents a set of tools to support the consistent integration of proficiency into training and assessment. Following this overview the rest of the report is organized as follows. A brief literature review and targeted environmental scan of relevant skills frameworks that informed our work is presented next. A summary of feedback and recommendations from the expert Panel and the methodology used to develop the tools are then discussed. Finally, the proficiency materials are presented.

The proficiency materials are the key focus of the report. These include a) a brief user guide, b) for each skill, a set of dimensions that describe the context in which skills are performed, and c) a set of proficiency statements that describe the behaviours required to perform in different contexts (jump to Proficiency Materials).

Key proficiency materials

For each skill, we would like to draw attention to three key proficiency materials:

- **Dimensions**: Skills are performed within specific work, learning, or life contexts. Dimensions describe the context and complexity of a situation that requires skill application. These are the situational factors that influence how a skill is used. They describe the difficulty drivers that make a situation more or less complex. With these dimensions, for each skill, we attempt to provide a framework to describe the range of situations where this skill might be applied. They also help establish the boundaries between proficiency levels. For example, dimensions of collaboration include group dynamics that range from small groups where everybody knows one another and has worked respectfully before (Level 1), to large, unfamiliar, and diverse groups (Level 5). Dimensions are intended to facilitate the development of training contexts or activities appropriate for learners to learn, practice, and apply skills at each level of difficulty.
- **Proficiency statements**: Proficiency statements connect the dimensions to the components that define the skill and focus on the evidence of skills application. More particularly, we highlight the *specific behaviours* expected at each level, corresponding to the complexity of the situation or context in which the skill is applied, as described by the dimensions. These behaviours are what someone would do to respond in such a situation or context. For example, a person with sufficient collaboration skills to work with a small familiar group demonstrates that they respect others, follow instructions and complete assigned tasks (Level 1). A person with sufficient collaboration skills to work with a large, unfamiliar, and diverse group demonstrates that they inspire trust and can build and strengthen team environment through leadership, coaching and mentorship (Level 5). Proficiency statements guide training and assessment development by outlining the observable behaviours that demonstrate different levels of skill. They provide a basis for collecting evidence through observations, self-reflection, or other assessment and pedagogical methods.
- **Overarching level descriptors**: These are high-level description of proficiency, aligned with the proficiency information published on the Skills for Success website as part of its launch. These overarching level descriptors are intended for the general public to get a quick overview of Skills for Success. Reading, Writing, and Numeracy have 5 overarching level descriptors and the remaining skills have 3 levels.

A Panel member summarized the need for both dimensions and proficiency statements: *"Proficiency is about an individual's ability to do something; however, complexity is the flip side of this. Task[s] that are more difficult or require a more complex operation, multiple steps, etc., require more proficiency. In order for curriculum developers or assessors to completely understand proficiency they must understand why a higher proficiency is required."*

- Panel member

Table 1 includes links to the proficiency materials for all skills; the table can be used to navigate to different proficiency tools.

Table 1 Proficiency tool navigation

Skill	Dimensions	Proficiency statements	Overarching descriptors
Reading	Table 3	Table 4	Table 5
Writing	Table 6	Table 7	Table 8
Numeracy	Table 9	Table 10	Table 11
Digital	Table 13	Table 14	Table 15
Problem Solving	Table 16	Table 17	Table 18
Communication	Table 19	Table 20	Table 21
Collaboration	Table 22	Table 23	Table 24
Adaptability	Table 25	Table 26	Table 27
Creativity and Innovation	Table 28	Table 29	Table 30

As previously discussed, this report is intended to supplement existing resources on the Skills for Success website, providing further technical details to inform and inspire training and assessment development. The intended audience of this report includes training practitioners and assessment developers – therefore, the report is quite technical and rich in details. Users are encouraged to apply and adapt it to diverse training and assessment contexts, including simplifying the language to communicate skills progression to learners, focusing on certain aspects of proficiency to facilitate targeted programming, and contextualizing these proficiency materials to align with diverse learning and assessment needs. For the rest of this section, we elaborate on the intended audience or targeted users of the report and potential use cases depending on goals.

Intended users: Training practitioners

This project was targeted at creating proficiency materials primarily for the use of curriculum developers and training practitioners. Practitioners could use the dimensions or difficulty drivers to construct learning scenarios with varying complexity, providing opportunities for learners to practice and apply skills in safe learning environments. Practitioners could also use the proficiency statements to develop rubrics to collect evidence of skills. This could be done as part of learner needs assessment at the beginning of the programs to establish baseline skills assets and gaps, informing training customization. This could also be done throughout training to collect evidence of skills development—through observations, formal or informal evaluation. It could also be done at the end of the programs to measure final training outcomes, gauging the extent to which the learners had progressed in their skills development journey.

> *"[P]ractitioners can struggle to track the learners over time because there wasn't enough precision about what they were looking for. So, with this new framework, they would get the added precision."*
> - Panel member

Intended users: Assessment developers

Similarly, assessment developers could use the proficiency materials in this report to tighten the alignment between assessment tools and Skills for Success training models. Dimensions and proficiency statements could be used to inform the development of assessment scenarios. Dimensions could be used the vary the difficulty levels of these scenarios. Proficiency statements could be used to inspire the development of self-reflected behaviour-based assessment items.

> *"I think being able to assess on multiple dimensions…or multiple skill areas is going to be really interesting moving forward…I'm really interested to see what more we can do in assessing multiple skills in predicting performance."*
> - Panel member

Indirect users: Employers and learners

While employers and learners were not intended as the direct users of this report, the proficiency materials presented would have important implications for both. For example, the proficiency statements could help employers picture the types of skills that their employees would gain through training and how these skills would align with job tasks and responsibilities. The materials provided the training practitioners and the employers with a common language to discuss skills needs, ensuring training objectives aligned with job performance requirements. They could also inspire further development of employer assessment tools, helping employers reflect on the effectiveness of workplace training in a more systematic way.

> *"Employers or specific sectors could look at making some small investments into adapting these to meet their localized needs – translating what's general into what's specific for their workplace."*
> - Panel member

In interactions with learners, practitioners could use and adapt the dimensions and difficulty drivers to explain to them their skills assets and gaps, providing examples of scenarios in which the learners would likely excel in based on existing skills, as well as examples of scenarios in which they might require additional support to formulate more effective responses due to gaps in skills. Throughout a training program, practitioners could also revisit the language of dimensions and proficiency statements to help learners track their progress and celebrate successes along the way, increasing motivation to continue training (Ward et al., 2021).

Glossary

Skill components: When Skills for Success was launched, each skill was conceptualized with a couple of definitional statements and a series of six skill components. These six skill components represent the behavioural and cognitive processes involved in the skill.

Dimensions: Dimensions describe the characteristics of a situation that requires skill application. Dimensions explains the extent to which a situation is complex by specifying the difficulty drivers of that situation. Dimensions help frame and sketch the conceptual boundaries of the proficiency levels. Dimensions describe the context.

Proficiency statements: Proficiency statements connect the dimensions to the definitional skill components. Proficiency statements describe the specific behaviours required to respond to a set of complexity or difficulty drivers. Proficiency statements describe the behaviours.

Overarching level descriptors: These are high-level description of proficiency, aligned with the proficiency information published on the Skills for Success website as part of its launch. These overarching level descriptors are intended for the general public to get a quick overview of Skills for Success. Reading, Writing, and Numeracy have 5 overarching level descriptors while others have 3 descriptors corresponding to Entry, Intermediate, and Advanced skill levels.

LITERATURE REVIEW AND ENVIRONMENTAL SCAN

This section summarizes the resources identified and reviewed throughout the project. We first highlight the resources that provided critical input for our development of proficiency materials. Resources that provided inspiration or confirmed that we were on the right track are also briefly described. These resources helped frame the structure and approach of our development work. We also repeatedly referenced these resources throughout the project as we built and expanded the proficiency details, using these resources to ensure we made the right word choice, provided sufficient description for a dimension, or struck the right balance between specificity and generalizability. This section aims to provide both acknowledgement and appreciation of these resources, many of which were developed and recommended by members of the Expert Panel, and document critical reports and publications that could be revisited as the Skills for Success model would continue to evolve.

PROFICIENCY MATERIALS FROM THE ESSENTIAL SKILLS

To maximize continuity between the Essential Skills framework and the Skills for Success model, we started our review with the Essential Skills proficiency materials. Particularly, the Reader's Guide to Occupational Essential Skills Profiles (Fownes et al., 2010) was a key resource. The Reader's Guide describes the structure of the complexity ratings for each Essential Skill and specify the dimensions used to differentiate across the levels.

Reading, Document Use, Numeracy, and Digital Technology all have five levels of complexity, while Oral Communication, Working with Others, Thinking, and Continuous Learning have four levels. The complexity levels for Reading, Document Use, and Numeracy were aligned with standardized assessment ratings, specifically those of the International Adult Literacy Survey (IAL). Much of the subsequent development in literacy and Essential Skills research and assessment can be traced back to this first systematic international initiative (SRDC, 2018). The thresholds between levels indicate an individual's probability of performing each type of task successfully. For example, an individual at Level 3 would perform tasks from Levels 1 to 3 with high proficiency but perform tasks from Level 4 less consistently.

The complexity ratings and dimensional language from the Reader's Guide provided an important foundation for developing new proficiency statements. We adapted these materials to generate the first draft of proficiency materials. Simple re-alignment and revisions was made to reflect the updated Skills for Success. Particularly:

- For Reading, Writing, and Numeracy: Dimensions and complexity ratings of Document Use were distributed and integrated into Reading, Writing, and Numeracy where appropriate.
- For Digital: Dimensions and complexity ratings of Digital Technology were used to create the first draft. We noted some gaps, however, particularly related to data safety and security considerations, responsible online behaviours, ethical interpretation and use of digital tools, and continuous digital learning. We would need to scan other materials to address these gaps.
- For Communication: Dimensions and complexity ratings of Oral Communication were kept and modernized. Complexity related to diverse audience was added. Requirements around inclusive communication scenarios were drafted. Complexity of non-verbal cues were added to expand beyond oral communication. While this provided a good starting point, we would need to validate our conceptualization using other resources.
- For Collaboration: Dimensions and complexity ratings of Working with Others were revised to expand beyond the work context and include life and learning contexts. Emphasis on diversity and inclusion was added based on our understanding of skill definition and components. While this provided a good starting point, we would need to validate our conceptualization using other resources.
- For Problem Solving: Dimensions and complexity ratings of the Thinking Skills were mostly used. Particularly, proficiency materials related to Problem Solving – a section within Thinking Skills – were kept and revised. Certain dimensions and complexity ratings of Decision-making and Critical Thinking were also added with some revisions. While this provided a good starting point, we would need to validate our conceptualization using other resources.
- For Adaptability: We relied on the dimensions and complexity ratings of one of the Thinking Skills elements – Job Task Planning and Organization. We expanded these dimensions and complexity ratings to beyond job tasks and include tasks that could be applicable to life and learning contexts. Dimensions and complexity ratings of Continuous Learning were also integrated. However, materials related to change and emotion regulation during change were not present in the Reader's Guide. This was a gap that we needed to address using other resources.
- For Creativity and Innovation: As this was a new skill, we did not use the Reader's Guide to draft its proficiency materials. This was a major gap that we aimed to address with more scans of other resources.

While the first draft based on the Essential Skills proficiency materials provided a solid starting point, we noticed gaps in the conceptualization of skills and proficiency. Based on recommendations from the Expert Panel as well as our independent search for resources, we reviewed more documents to validate the drafts and address the gaps.

BOW VALLEY DOCUMENT USE INTEGRATION MAP

We had an insightful discussion with Panel members from Bow Valley College who have examined ways to integrate Document Use into Reading, Writing, and Numeracy. The Bow Valley team adopted both quantitative and qualitative perspectives in their analysis. Quantitatively, using almost 20 years' worth of assessment data, they reviewed the correlations of scoring parameters of all Document Use items vis-à-vis Reading, Writing, and Numeracy. Qualitatively, they reflected on the nature of Document Use tasks and mapped these tasks onto existing Reading and Numeracy assessments. Writing was unique as it had not been formally measured in the past; the team considered how Document Use could be intuitively aligned with Writing assessments, in principle.

The overarching goal of the analysis was to determine the primary driver of task complexity. Bow Valley Panel members explored whether the difficulty of each Document Use task was primarily in *locating* the correct information or in *translating* that information into a useful response. This analysis helped inform the decision-making process regarding how to distribute Document Use tasks across Reading, Writing, and Numeracy.

Aligned with this overarching goal, Bow Valley Panel members identified two major task domains: *exporting* and *inputting* information into a document. Each domain was further broken down into text, numeric, and symbolic information. In each area, two types of tasks were identified—*identifying and transcribing* information and *generating and producing* information. These tasks were then mapped into Reading, Writing, or Numeracy.

Within the *exporting* domain, tasks were classified as Reading if the complexity was driven by the difficulty of identifying and transcribing the correct information (including text, numerical information, and symbol and codes) less than a sentence in length. Tasks involving generating and producing symbols and codes (e.g., inputting a date into a form) were also considered Reading as they were too short to be considered writing and did not involve Numeracy skills. Tasks were classified as Writing if they involve generating and producing the correct text one or more sentence in length, or involved generating and producing an explanation to accompany the numerical information. Tasks were classified as Numeracy if they primarily involved generating and producing calculations.

Within the *inputting* domain, Bow Valley College developed two options to classify these tasks. The first option would be similar to how exporting tasks were classified. That is, tasks involving identifying and transcribing the correct information would be Reading. Tasks involving generating and producing the correct text would be Writing, generating the correct numerical information would be Numeracy, and generating the correct symbols and codes would be Reading. The second option considers in the complexity of the document being used to input information. For tasks requiring generating and producing the correct information, the ability to

input an explanation would be classified as Writing. To input this information into the correct location within a form, the extra step of understanding the prompt and locating the place within the document would be classified as Reading. Similarly, to generate and produce the correct numerical information would be Numeracy, but to correctly understand the prompt and input it into the correct location on a form would require Reading.

The implication of the second option for classifying inputting tasks was that there might be a possibility to assess multiple skill domains using a single item set. For example, Reading can be assessed alongside of Writing within a set of inputting tasks. Reading can also be assessed in parallel with Numeracy if the task requires both calculating the correct numerical information and finding the correct location to input the numbers.

Bow Valley Panel members emphasized that they are at an early stage in data collection from the assessment perspective to validate their task classification. They would like to collect more data to analyze the patterns that connect these items to see if they indeed belong to these skills domains as conceptualized. They are also prepared for the possibility that new patterns might emerge through data analysis and shed light on how tasks should be structured and combined. They also noted that their analysis to date has focused on Levels 1 through 3 and has not yet extensively reviewed Levels 4 and 5, although they predict that the majority of the tasks at these higher levels would involve document creation (i.e., a Writing skill). Additionally, Bow Valley Panel members noted that spatial visualization tasks may be an area missing in this analysis, and that these tasks do not map neatly into Reading, Writing, or Numeracy and may require further reflection.

BOW VALLEY SKILLS FOR SUCCESS DIGITAL SKILLS TOOLKIT

The Bow Valley Skills for Success Digital Skills Toolkit was an important resource informing our Digital proficiency materials. This toolkit was designed to support the implementation of digital skills initiatives for workforce development, training, and assessment following the launch of Skills for Success. It provided a provisional framework to begin identifying digital competencies across occupations and industries.

The toolkit provided important skill categories that inspire the scope of proficiency dimensions. For example, considerations around the complexity of digital devices, complexity of information and data use, necessity of safe practices, and importance of continuous learning were noted. Using this toolkit and in discussion with the Bow Valley team, we recognized that Digital skills were unique in the sense that it needed to cover the application of other skills in digital environments (e.g., Reading, Communication, Collaboration, Problem Solving in digital environments). As a result, we conceptualized the proficiency materials for Digital skill to include reference to other skills, emphasizing the unique elements related to performing these

skills online or digitally. For example, while "digital interactions" related to Collaboration, the complexity of "digital interactions" highlighted the complexity of the digital environment required in the interactions rather than the complexity of the collaboration.

PISA CREATIVE THINKING

The PISA 2022 Creative Thinking Framework supported the development of Creativity and Innovation proficiency materials (OECD, 2023). As this was a new skill in the Skills for Success model with no related materials in the Essential Skills framework, this resource was highly valuable tool used to inform our thinking around the dimensions of Creativity and Innovation.

The PISA assessment includes a three-part competency model to describe the constructs underlying creative thinking. The first competency, *generate diverse ideas*, relates to ideational fluency and flexibility, or the ability to generate multiple ideas that are distinct from one another. Building from this, PISA assessments will include items that require respondents to generate multiple, appropriate, and distinct ideas. This facet informed the development of dimensions that related to both the number and divergence of ideas (idea generation and divergence). The second competency described by PISA was *generate creative ideas*, defining creative ideas as "both novel and useful" (p. 23). Recognizing that generating completely novel and unique ideas is a very high-skill level task that is out of scope for the majority of test-takers, originality (compared to other test-takers) is used instead of novelty. Building on the identified importance of generating ideas that are both original and appropriate or useful, two dimensions were generated (originality and uniqueness; and relevance, quality, and value creation, respectively). The third competency, *evaluate and improve ideas*, outlines the importance of learners' ability to refine ideas through an iterative process of development. This competency informed the development of a dimension related to evaluation and improvement of ideas (development and refinement of own and others' ideas).

PISA PROBLEM SOLVING

PISA resources were also used to validate and refine the Problem Solving dimensions, building on dimensions found in the Essential Skills proficiency materials. The PISA 2012 Problem Solving framework and the PISA 2015 Collaborative Problem Solving framework describe three components that provide the basis for problem solving: the *problem context, nature of the problem situation,* and *the problem-solving context* (OECD, 2013; OECD, 2017). These components were used to validate and further refine the dimensions and proficiency statements. For example, the *nature of the problem situation* relates to the information available to the problem solver, differentiating between "static" problem situations, in which all information is available, and "interactive" problem situations, in which more information must be obtained or

explored. Furthermore, this component describes the variation of problems based on how well the problem and goals are defined. These elements were used to validate and refine the proficiency dimensions "complexity of the information needed" and "complexity of the problem definition".

PIAAC ADAPTIVE PROBLEM SOLVING

The more recently published PIAAC Adaptive Problem Solving assessment framework (Greiff et al., 2021) was reviewed to further develop the dimensions. The "adaptive" elements of problem solving described in the framework relate to complex and dynamic problem solving and modernize previous large-scale problem-solving assessments, including the PISA 2012 assessment described above. This framework describes three task dimensions: the problem configuration, dynamics of the situation, and features of the environment. These task dimensions are linked with "difficulty drivers", or elements that alter the level of challenge and ability required to solve problems. The difficulty drivers specified include the number of elements and interaction between problem elements; number of parallel tasks and goals; the salience and frequency and relevance of change; and the wealth, sources, and proportion of (ir)relevant information.

The inclusion of difficulty drivers as an overarching structure validated the approach used to structure the proficiency materials, in which we include dimensions with five levels of graded complexity that describe increasingly complex scenarios. Similar to PISA's difficulty drivers, our dimensions are used to describe varying levels of ability—or skill proficiency—required to complete problem solving tasks. Furthermore, the specific difficulty drivers described were used to further develop the Problem Solving dimensions. For example, the difficulty drivers related to information were synthesized into the dimension "complexity of information needed".

OTHER SKILLS FRAMEWORKS

Throughout the developmental process, SRDC scanned other frameworks that included social-emotional skills, especially Canadian frameworks, national skills frameworks with a similar purpose as Skills for Success, and international assessment frameworks, some of which were recommended by the Skills for Success Program and the Expert Panel. As illustrated in Figure 4, similar to Skills for Success, many of these forward-looking frameworks were designed for the constantly evolving and increasingly global and interconnected world, highlighting skills that allow us to work and communicate with diverse people, use creativity and critical thinking to solve local and global problems, and continuously adapt and learn. Table 2 provides a brief description of these frameworks and our interpretations of them in the context of this project.

In the case of OaSIS and the Canadian Language Benchmarks (CLB), given potential inter-operability considerations, we also briefly assessed the alignment at a high level. OaSIS elements (e.g., skills, abilities) were mapped to relevant Skills for Success components based on definitions and we assessed whether the indicators used in the Canadian Rating Guide were included in our own conceptualization of proficiency. Generally, the indicators from the Canadian Rating Guide were reflected in our own understanding and direction, but often dispersed across different skill components. When the indicators were not included in our proficiency materials, typically our proficiency materials focused more on how a process was carried out (e.g., how support is provided) versus what the process was applied to (e.g., number of people supported). With CLB, it appears that our five levels for Reading and Writing can be roughly aligned with their proficiency levels. Further discussion on interoperability of Skills for Success and the OaSIS is presented in Appendix A, and some examples of the Canadian Rating Guide are presented in Appendix B.

Figure 4 Frameworks that contributed to the conceptualization

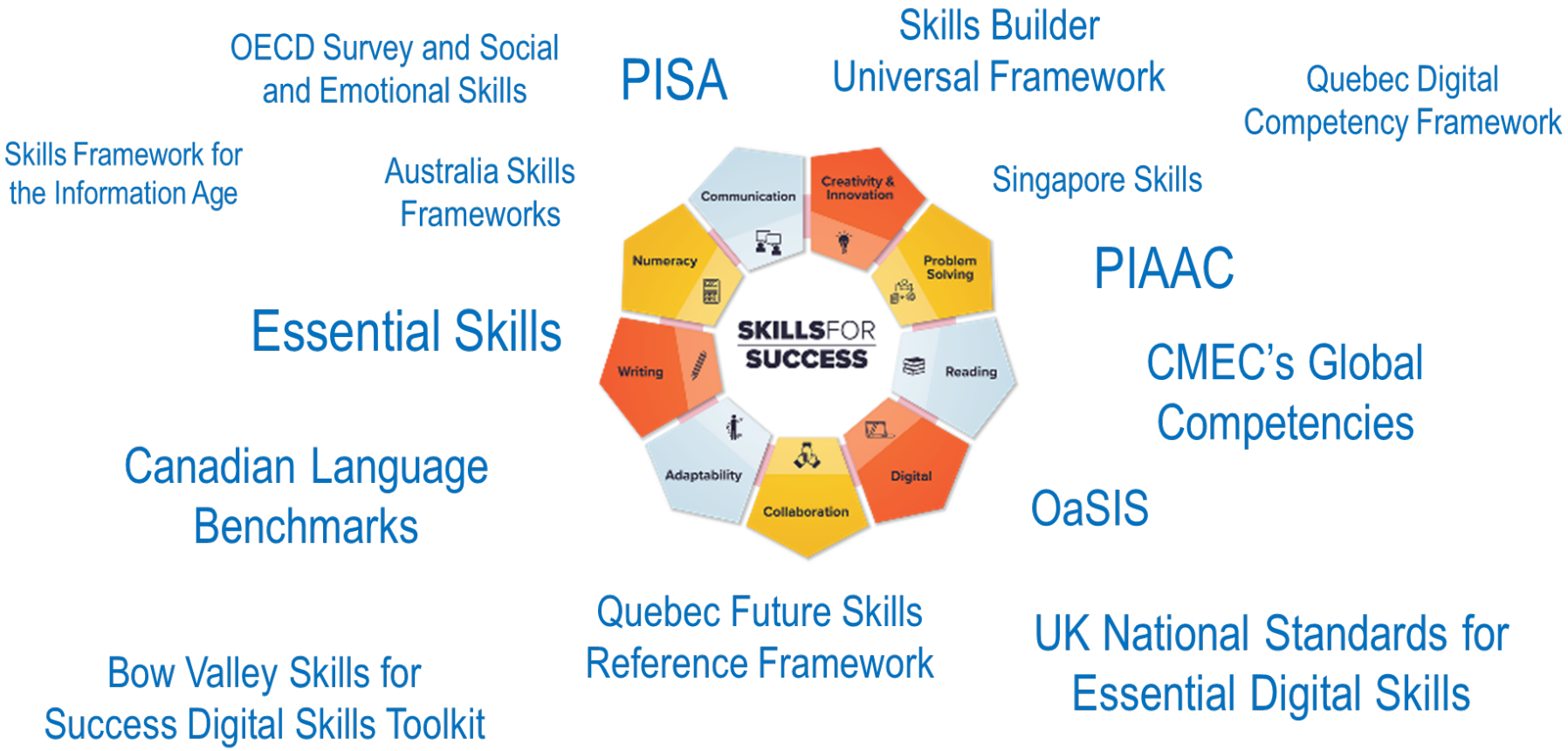


Table 2 Reviewed frameworks

Name	Description	Proficiency explanation	Associated assessments
Comprehensive skills frameworks			
Essential Skills Profiles (Readers' Guide to Essential Skills Profiles)	A resource from the Essential Skills framework that provides task complexity descriptors for each of the Essential Skills, defined at 4 or 5 levels of complexity depending on the skill.	Descriptors for 4 or 5 levels of task complexity, including some occupation-specific examples.	Assessments for the Essential Skills, including assessments from the Essential Skills Group (ESG) and the Test of Workplace Essential Skills (TOWES).
Occupational and Skills Information System (OaSIS)	A database that links competencies to over 900 occupations, aligning with the National Occupation Classification (NOC) system and the Skills and Competencies Taxonomy (SCT). Lists skills, abilities, personal attributes, interests, knowledge, work contexts, and work activities for each occupation. SCT elements are rated on a 5-point scale according to the Canadian Rating Guide. Because of the commonality in fundamental building blocks (e.g., skills, abilities) and structure (e.g., 3-level and 5-level proficiency), and that users may in some cases need to use both resources, it will be important to consider the interoperability between OaSIS and Skills for Success.	Some SCT elements rated on 5-level scale (skills, abilities, and work activities) and others are rated on a 3-level scale (knowledge and some work context descriptors). Elements have 2 indicators or dimensions each. Rating scale refers to proficiency for skills and abilities, and importance for personal attributes.	None
Quebec Future Skills Reference Framework	Provincial framework describing 10 referential skills and providing a common language for labour market partners.	Descriptors for 4 levels of proficiency	No known generalized assessment as part of framework
Australia Core Skills Framework (ACSF)	National framework to identify and develop core skills Reading, Writing, Numeracy Oral Communication, and Learning in personal, workplace, and education contexts.	Descriptors for 5 proficiency levels, with dimension indicators	None / Unknown

Name	Description	Proficiency explanation	Associated assessments
Australia's Core Skills for Work Development (CSFW)	National framework for non-technical skills, knowledge and understandings that contribute to success in work, such as employability or generic skills.	Descriptors for 5 proficiency levels, no explicit dimensions shared	None / Unknown
Singapore Skills – Future Critical Core Skills (CSS)	National framework describing 16 competencies across three skill clusters that are essential to the workplace.	General descriptors for 3 proficiency levels (basic, intermediate, advanced) across 4 dimensions. Skill-specific descriptors are not broken down by dimension	None / Unknown
Skills Builder Universal Framework	Framework that breaks down 8 essential skills into a sequence of steps from beginner (0) to mastery (15). Developed in the UK, but also used internationally.	Skills and proficiency descriptors are integrated. Steps 0 to 15 are grouped into 4 levels (Beginner, Intermediate, Advanced, Mastery)	Self-report survey using 5-point Likert scale, with one item per skill step
CMEC Global Competencies	Describes 6 broad global competencies that are attitudes, skills, knowledge, and values that can be applied locally and globally to meet demands of life, work, and learning.	None / Unknown	None / Unknown
Assessment-focused frameworks			
Programme for the International Assessment of Adult Competencies (PIAAC)	International Survey of Adult Skills conducted every 10 years that measures literacy, numeracy, and problem-solving for work, home, and community contexts. The newest second cycle includes social-emotional skills.	Descriptors for 5 proficiency levels for literacy and numeracy and 4 for problem-solving (includes below Level 1). Task characteristics that determine difficulty available.	Task-based assessments for literacy, numeracy, and problem-solving, scored on 500-point scale. Big Five Inventory was included in one wave as part of the first cycle. Details not yet available for social-emotional skills measure for second cycle.

Name	Description	Proficiency explanation	Associated assessments
OECD Survey on Social and Emotional Skills (SSES)	First international survey around student social and emotional skills that includes a comprehensive conceptual and assessment framework based on the Big Five.	None / Unknown	Self-report survey items with a 5-point agreement scale, teacher, and parent reports also available
Programme for International Student Assessment (PISA)	International assessment of reading, mathematics, and science in 15-year-old students conducted every 3 years. Previous innovation assessments each cycle include creative problem-solving, collaborative problem-solving, and global competence. Current and future assessments include creative thinking and learning in the digital world.	Descriptors for 6 and 4 proficiency levels for creative and collaborative problem-solving, and 5 for global competence. Task characteristics that determine difficulty available.	Task-based assessments for innovation skills that may include scaled scores. Self-report survey items assess related social-emotional skills.
Skill-specific frameworks			
Canadian Language Benchmarks (CLB)	Framework for English and French as a Second Language, described as 12 benchmarks that reflect the development of knowledge and skills across four domains of listening, speaking, reading, and writing.	Descriptors for four stages (initial, developing, adequate, fluent) within each of 3 proficiency levels (basic, intermediate, advanced).	Task-based CLB Placement Test (CLBPT) and CLB Online Self-Assessment (CLB-OSA)
Quebec Digital Competency Framework (DCF)	Framework to foster the development of digital competency in the education community across Quebec, describing 12 dimensions of digital competency which incorporate some social-emotional skills such as problem solving, innovation and creativity, collaboration, and communication. Each dimension includes multiple elements.	Descriptors for 3 proficiency levels (basic, intermediate, advanced) for each element of each dimension.	None / Unknown
Bow Valley Skills for Success Digital Skills Toolkit	A toolkit was designed to support the implementation of digital skills initiatives for workforce development, training, and assessment following the launch of Skills for Success.	Not applicable	Not applicable
National Standards for Essential Digital Skills (UK)	Framework intended to be used to develop essential digital skills qualifications for five areas of digital skills.	Descriptors for two skill levels (Entry, Level 1). Entry level includes statements across three entry sub-levels	Assessments aligned with Essential Digital Skills qualifications (EDSQ)

Name	Description	Proficiency explanation	Associated assessments
Skills Framework for the Information Age (SFIA)	International framework for skills and competencies required by professionals who work in the digital world. Organized around 7 levels of responsibility (e.g., from Follow to Set strategy, inspire, and mobilise), 5 generic attributes or dimensions (e.g., autonomy, complexity), and 11 behavioural factors or social-emotional skills. Framework includes profiles of over 120 professional skills described at relevant levels of responsibility.	Descriptors for 7 proficiency levels across 5 dimensions. Proficiency descriptors also available for individual social-emotional skills.	Guidelines available for self-assessment and objective assessment or certified assessment (e.g., by manger, professional bodies). Relies on judging skills against framework benchmarks (e.g., self-reflection, interview, observation)

INPUT AND FEEDBACK FROM THE PANEL

The Expert Panel played an instrumental role in the development of the proficiency materials. As described in the Methodology section, the Expert Panel supported us throughout the high-level conceptualization of structure and approach, as well as provided detailed input to review and revise multiple drafts of these proficiency materials. Their input was important to ensure the resulting project outputs would be useful, practical, and informative for the field.

In this section, we summarized the overarching takeaway messages from the Panel that we used to build the approach, structure, and content of the proficiency materials. These were common themes that emerged throughout multiple group-based and individual consultations with members of the Panel. This overarching guidance acted as critical building blocks that we used to build the proficiency materials. We summarize these building blocks to prepare for the more detailed proficiency materials that will be presented in the subsequent section.

APPROACH

Members of the Expert Panel consistently emphasized that the proficiency materials should have the following characteristics.

- **Flexible and applicable** – Describe transferrable skills, rather than the ability to complete specific, context-dependent tasks. Use descriptions that are relevant or could be easily adapted to different work contexts (e.g., sectors, occupations, organizational structures), learning contexts (e.g., training, school), and life contexts (e.g., everyday activities). This applies to the content, language, and examples used.
- **Specific and observable** – Use simple, unambiguous language, and keep descriptions short and concise. Define concrete, observable behaviours that correspond with the demonstration of skills in real-world situations.
- **Strength-based and holistic** – Express proficiencies in positive statements that define what individuals can do, rather than what they cannot do. Recognize the different components (e.g., knowledge, confidence, experience, consistency) that contribute to an individual's ability to perform a skill.
- **Independent** – Create descriptors that are independently useful and have meaning beyond relation to other levels in the set. Avoid using the same statement multiple times with different adjectives (e.g., somewhat well, very well, extremely well).
- **Distinct** – Maintain distinctions between different skills (e.g., collaboration and problem solving) and different skill components (e.g., identify opportunities to innovate and generate

novel ideas in creativity). Minimize explicit references to other skills and skill components. However, the skills and skill components are by nature interrelated in ways that support and complement each other. Some overlap is likely unavoidable.

- **Comprehensive** – Ensure descriptions provide coverage of all skill components within a skill, especially new components that are part of the modernization of the framework (e.g., diversity and inclusion). This can be reflected in task dimensions, proficiency statements, and overarching descriptors.

These characteristics were also highlighted in the research literature (SFIA Foundation, 2021; Council of Europe, n.d.; Ward et al., 2021). When we drafted the proficiency materials, we aimed to incorporate these characteristics as much as possible, applying them to the task dimensions, proficiency statements, and overarching descriptors of proficiency.

STRUCTURE

Details

The Panel members recommended a two-part structure for the proficiency materials to facilitate use. This structure would include shorter, more simplified proficiency descriptors to be provided to the general public, similar to the current proficiency materials presented on the Skills for Success website. In parallel, more detailed and comprehensive materials on proficiency could be provided in the form of a technical report, to serve the needs of practitioners who would use these materials for training and assessment development.

> *"I've done this for years. I can dive straight in. Not everybody is quite that comfortable. And so maybe a 2 tier [structure] for those who just want to get their feet wet and then another level [of details] for those who actually want to dive in."*
>
> - Panel member

Most Panel members stated that the short proficiency descriptors for the general public should be simple yet well-balanced, providing adequate coverage of all skill components. Some felt that the existing descriptors on the website might be overly simplistic and could create the wrong impression that certain skills components were more important than others. Some Panel members recommended minor updates to the short proficiency descriptors to address this misperception. However, others cautioned that the current public version should be retained until more evidence is collected to inform more rigorous updating.

We incorporated the comments from the Expert Panel and adopted a two-part structure to the proficiency materials. We prepared summary descriptors with simple language that would be suitable for the general audience while providing detailed technical guidance and proficiency materials for a practitioner audience with more specific information needs.

Number of levels

We had a robust discussion around the appropriate number of levels for the proficiency descriptors. In the draft proficiency levels presented in the initial launch report, five levels of proficiency were described for the literacy skills (Reading, Writing, Numeracy) and three levels for the remaining skills. Other domestic and international skill frameworks propose between three and seven levels; the Essential Skills Reader's Guide includes 4 and 5 levels, depending on the skill.

- **Continuity and interoperability:** Generally, Panel members agreed that the 5-level structure for the literacy skills (e.g., Reading, Writing, Numeracy) should be retained, given the large body of evidence supporting this structure, interoperability with international frameworks, and alignment with current assessment tools. However, caution must be taken to ensure that if a 5-level structure is used, there is sufficient alignment with OaSIS, or a clear messaging strategy or distinction in use-cases between OaSIS and Skills for Success proficiency to minimize confusion between the tools.
- **Ease of interpretation**: Panel members shared that maintaining 5 levels across all skills would increase the usability and ease of interpretation of the model, for both practitioners and for learners. As some practitioners pointed out, learners may find it confusing that some skills are on a 3-level scale, and others on a 5-level scale. Panel members also felt that the 3-level structure may be too "dense", with large amounts of variation within levels. With a three-level structure, it can be challenging to expand and develop curriculum, pinpoint learners' proficiency at intake, or to clearly communicate skill gains.
- **Alignment with other tools**: Several Panel members raised concerns about how the levels align with current assessments or would align with future assessments. In particular, interoperability with OaSIS was discussed, with some Panel members preferring a 5-level structure to increase consistency, and others sharing concerns around the potential for confusion and misinterpretation if both frameworks use 5-level structures but are not tightly aligned.
- **Clear distinctions between levels**: Regardless of the number of levels, many Panel members emphasized the importance of clear distinctions between levels that are understandable and obvious to professional and non-professional users of the framework. Regardless of the number of levels, the descriptors should clearly demonstrate a progression of skills.
- **Need for evidence-based levels**: Panel members stressed the need for evidence-based proficiency levels, although there was variation in the preferred final product; some felt that analysis of large-scale data should be conducted to generate 5-level structure, others suggested the data would indicate the ideal number of levels, and still others suggested using the results to create a 500-point structure.

As a result, we used a five-level structure for the more detailed, technical materials to provide a detailed gradation of proficiency for practitioners, while retaining a three-level structure for the public-facing materials for now to minimize unnecessary disruptions to current users of Skills for Success proficiency descriptors.

In the subsequent section, we explain how these levels would map onto each other, with the following "rule of thumb" across all skills:

- Entry level corresponds to Levels 1 and 2;
- Intermediate level corresponds to Level 3; and
- Advanced level corresponds to Levels 4 and 5.

As data emerges, we strongly support further development and revision as necessary.

> *"Having a consistent 5 levels across all the skills would be ideal. Not only does it make the model symmetrical, this allows for a more defined spread of proficiency. Only having 3 levels together makes it more difficult to expand and develop appropriate curriculum, and to pinpoint where a learner actually falls within the proficiency."*
>
> - Panel member

Dimensions to describe contexts

Discussions with the Panel members highlighted the needs for specificity in the proficiency materials, while at the same time ensuring they are applicable across a wide range of work, learning, and life contexts. As a thought exercise, Panel members reflected whether or not the proficiency materials should be work-focused (i.e., specific to a general workplace context) or context-independent (i.e., applicable to work, life, and learning). The Panel identified pros and cons of both work-focused and context-independent approaches. The benefits of workplace-focused descriptors included that they would be more useful for employers and employees and provide a more concrete basis for generating assessments or identifying specific skill gaps or learning needs. However, as a result of this specificity, it could be difficult to make descriptors that apply broadly across sectors, and there would be a need for regular updating to stay current with the changing nature of work.

Conversely, context-independent descriptors were seen as better able to capture the diverse range of skills individuals would have (beyond those required in a specific workplace) and the diverse ways that skills could be expressed. They would be well suited to more general pre-employment training and supportive of application in other contexts (e.g., return to school, general job search, general employment readiness training).

> *"Context dependent guidance for specific sectors would be highly valuable to employers and workers, but general descriptors ensure relevance for folks in engaged in community-based learning that supports a return to school, post-secondary, job search, employability development before beginning to work in a given sector or industry. Both are needed."*
> - Panel member

Some Panel members shared that a more general approach would help to distinguish the proficiency levels from OaSIS, which is highly workplace and occupation focused, reducing confusion between the frameworks. Many Panel members advocated for striking a middle ground that was not overly specific (e.g., not limited to a certain occupation or sector) while providing concrete examples or guidance. One Panel member additionally suggested incorporating dimensions to take into account the context and how it may encourage or limit skill application (e.g., test anxiety).

As a result of this line of inquiry, we conceptualized dimensions to describe the context in which skills are applied. Using concrete language, the dimensions describe the difficulty drivers that are applicable across employment, life, and learning contexts. To increase specificity, many of the dimensions also include example statements to provide further guidance.

> *"[These dimensions] would help in terms of writing both the assessment and the training curriculum, cause that's what we found that, you know, if you vary different exercises by those dimensions, that's one way for you to introduce some variations in the proficiency and complexity in there as well. It also helps you work towards your learning outcomes by using different methodologies and tools, so you can speak to different learning styles and different people ways that people engage."*
> - Panel member

Proficiency statements to link to skill components

To ensure the proficiency materials stayed connected to the definitions and components of skills, we drafted proficiency statements that incorporated more behaviour-based language and mapped dimensions directly only skills components. Overall, Panel members expressed positive feedback on ensuring alignment with the existing Skills for Success components. Members

shared that such alignment would support practitioners to develop learning activities, or to generate job descriptions, that could reflect different sub-areas of skills. Additionally, this structure would provide equal emphasis on each of the skill components, reducing the risk that some skill components might become over- or under-weighted over time. Most emphasized the need to provide this information in a useable, structured format that would not overwhelm the audience.

Informed by this feedback, we developed a set of proficiency statements for each of the Skills for Success, aligning the dimensions with the skills components. Each statement corresponds to one component (out of 6) and one level of proficiency (out of 5). The result was a table of 30 proficiency statements for each skill that achieved a balance between specificity and usability.

LANGUAGE

Behaviour-based vs task-based language

A thoughtful discussion on the merits of task-based and behaviour-based language emerged in our consultations. Panel members generally agreed on the benefits and drawbacks of task-based and behaviour-based language. Overall, members shared that task-based language would be more specific, concrete, and measurable. However, due to the specificity, task-based statements may fail to capture the full range of skills an individual might have and therefore would have more difficulty capturing diverse applications of skills. Behaviour-based language was seen as more subjective, context-dependent, and difficult to apply consistently but more inclusive of diverse demonstrations of skills, more adaptable, and more supportive of continuous learning.

"What I'm seeing that both have their place. The reason is that the more, you know, the traditional essential skills can be you know, more clearly specified when it's task-based… While the social-emotional ones possibly are best defined and distinguished when they are behaviorally defined. So, for me it's not one or the other, it's which one's gonna support a more accurate and a more specific, clearly understandable level."
- Panel member

Panel members held a range of opinions on which language was most appropriate for the proficiency descriptors, with strong arguments for both types. Some members expressed a preference for using behaviour-based statements in order to further distinguish the proficiency levels from OaSIS and to minimize misalignment between the frameworks. Others suggested that task-based statements may be more appropriate for the traditional literacy skills (Reading, Writing, Numeracy), while behaviour-based statements may be better suited for social emotional skills.

Additionally, Panel members raised considerations around how the language used in the proficiency materials may influence assessment development. Many Panel members shared that task-based descriptions would be more useful for generating assessments, due to their specificity. However, others argued that assessments could be developed from behaviour-based descriptors, especially in cases where behaviours could be observable.

To balance both views, we developed the proficiency materials in a way that incorporated both types of language. The dimensions use more concrete language that would shape the complexity of tasks. These may be particularly useful to inform the development of training and assessment scenarios. The proficiency statements and overarching descriptors use behaviour-based language that can inform the observation of skill application.

Common or unique dimensions

Throughout the project, we weighed the relative merits of dimensions that were common to all skills and dimensions that were unique to each skill. Panel members largely agreed that including unique dimensions for different skills would allow for increased precision and accuracy of the proficiency levels, as well as providing increased specificity and guidance for users. However, many recognized that common elements may emerge, and where relevant, they could be included. In addition, many Panel members requested incorporating dimensions that more clearly related to task difficulty, similar to those included in the Essential Skills Reader's Guide. Panel members shared that describing skill demonstration in a more concrete, contextualized way would increase the usability of the framework. As one member described, it would be important to be able to describe skill demonstration in increasingly complex contexts or scenarios.

> *"Having the proficiency dimension for each unique skill allows for maximum guidance for practitioners. This would be more precise. In contrast, using dimensions common to all skills risks losing some of their accuracy or relevance for the unique skill in question."*
> - Panel member

> *"There needs to be room for interpretation. There needs to be room perhaps for different ways that it'll be used. Obviously, I'm still trying to keep to the [Skills for Success] framework, but allowing for that growth.*
> - Panel member

In addition to the need for specificity, multiple Panel members spoke to the importance of leaving room for interpretation, growth, and adaptation of the proficiency materials to meet the needs of different user groups.

Many Panel members requested additional guidance, including specific examples, case studies, and scenarios, to support practitioners in understanding how to apply these proficiency materials with learners from diverse backgrounds and life experiences. Support to increase capacity and confidence of practitioners to adapt the proficiency framework to their unique training context and diverse learner and employer clients was also requested.

> *"It would be really important to add those additional precisions, in follow-up or deeper dive kind of resource, which would address some of the scenarios that people encounter with individuals that don't fit a standard frame."*
>
> - Panel member

As a result, we developed unique dimensions for each skill, although where applicable we made some dimensions consistent across skills.

Specificity and strength-based language

Panel members emphasized the importance of proficiency materials written in broadly useable, simple, and concrete language. Panel members recommended ensuring that the language level should be widely accessible, and that content should be organized in a way that minimize information overload. Secondly, they urged that the proficiency materials should avoid language that was too general, vague, subjective. Generally, Panel members suggested avoiding descriptors that relied on changing qualifiers (e.g., "simple", "complex", "very complex") to distinguish levels.

A discussion around cultural norms also arose, noting that some of the terms included in the proficiency materials would be related to social or group norms that may vary depending on group, such as terms or concept related to "polite" or "professional" communication or collaboration behaviours. The proficiency materials, especially the behaviour-based statements, included some space for interpretation and should be adapted or modified as required to align with diverse learning contexts and learner populations.

> *"One area that needs to be carefully thought about is the use of subjective language, or language describing behaviors that cannot be observed."*
>
> - Panel member

Following this recommendation, we included strength-based language across the proficiency materials and minimized the use subjective language and qualifiers to distinguish between levels. We would also like to point out that some terms may be based on cultural or group norms and could vary based on context. Adaptation of the proficiency materials to align with diverse training contexts and learning needs would be encouraged.

Clearly differentiate skills, dimensions, and levels

When reviewing the proficiency materials, Panel members indicated the importance of clearly differentiating between skills, as well as within skill. While the skills were seen to be interrelated to some degree, Panel members emphasized the need to delineate the skills where possible to better inform the development of training and assessment tools specifically for each skill. Additionally, Panel members provided feedback on earlier drafts that the dimensions and proficiency statements at levels 4 and 5 could be differentiated further across all skills. Responding to this feedback, statements in level 5 were often differentiated further by incorporating elements of leadership, mentorship, or generativity (e.g., generating new procedures).

We took these recommendations to conduct detailed revisions to clearly differentiate between and across skills. We also revisited the literature to ensure the final drafts were well-grounded in existing research.

THE PROFICIENCY MATERIALS

In this section, we present the proficiency materials developed through this project. An overview of the structure is first reiterated. We then provide some general user guide to help with the navigation and application of these proficiency materials. We would like to re-emphasize that these materials provide supplementary information and inspiration for further work, supporting the continued implementation of Skills for Success training and assessment.

The tables presented below include *examples* of proficiency statements. Adaptation, refinement, and further development of the proficiency statements is encouraged as evidence on Skills for Success continues to be collected. Furthermore, we encourage this data collection to inform refinements to the proficiency materials and to support a more valid and reliable understanding of skills proficiency.

OVERVIEW

To reiterate, the proficiency materials presented in this report consisted of the following:

- **Dimensions**: Dimensions describe the characteristics of a situation across work, life, and learning contexts that requires skill application. Dimensions explains the extent to which a situation is complex by specifying the difficulty drivers of that situation. Dimensions help frame and sketch the conceptual boundaries of the proficiency levels. The language of dimensions aligns with the Essential Skills Reader's Guide and more recent OECD assessment frameworks, most notably PIAAC Cycle 2. In this report, each of the nine Skills for Success were conceptualized to have between three to seven dimensions.
- **Proficiency statements**: Proficiency statements connect the dimensions to the components that define the skill. Proficiency statements describe the behaviours required to respond to the complexity or difficulty drivers. Proficiency statements illustrate how a person with Level 1 proficiency would behave and successfully respond to a certain set of difficulty drivers, in comparison with a person at Level 5 behaving and responding to a wider, more complex set of difficulty drivers. Proficiency statements are behaviour-based. We developed 30 proficiency statements for each skill.
- **Overarching level descriptors**: These are high-level description of proficiency, aligned with the proficiency information published on the Skills for Success website. These overarching level descriptors are intended for the general public to get a quick overview of Skills for Success. In this report, we revised the five overarching level descriptors for Reading, Writing, and Numeracy, as well as the three overarching level descriptors for Digital, Problem Solving, Communication, Collaboration, Adaptability, and Creativity and

Innovation. In general, "Entry" descriptors encompassed Levels 1 and 2, "Intermediate" descriptors correspond to Level 3, and "Advanced" descriptors summarize Levels 4 and 5.

USER GUIDE

The proficiency materials are organized as tables in the next section. Before diving into the details, we provide a brief guide to help with navigation and usage.

For each skill, a table of the three to seven dimensions spanning all five levels are presented first. A table of proficiency statements mapping all dimensions onto each of the six skills components, spanning all five levels are presented next. Finally, a table summarizing all dimensions and statements into overarching level descriptors are then presented. As discussed above, for the overarching descriptors, we present five levels for Reading, Writing, and Numeracy, and three levels for the remaining skills.

Each dimension and proficiency tables could be reviewed horizontally or vertically. A **horizontal review** provides a sense of how skill complexity increases for a specific skill area – cutting across all five levels. A **vertical review** provides a sense of skill demonstration, or the type of tasks learners can demonstrate, at a certain level – cutting across all dimensions or all skill components. It can be helpful to use both horizontal and vertical reviews when using the proficiency materials.

Finally, when reviewing the proficiency tables, there are a few considerations to keep in mind.

- When reviewing the proficiency tables, note that higher levels include the proficiencies described in previous levels. In other words, learners at Level 5 proficiency should be able to demonstrate proficiency of all previous levels.
- There are some overlaps between skills, or skill components. While these have been kept to a minimum, they reflect the overlapping and interrelated nature of skill acquisition.
- There may be cases where learners excel in one skill component but not others. For instructors and curriculum developers, presents the opportunity to provide additional training or support for these skill areas. For assessment developers, there is not yet an established guidance on how variations in proficiency level for different skill components should be interpreted to define a proficiency level for a skill.
- The proficiency materials use positive language to show what learners can do rather than what they cannot do. This means that at Level 1, we describe a limited range of tasks and behaviours that the individuals can do, possibly with a lot of guidance and support. There may be an implicit "Level 0" of individuals who cannot consistently do the limited activities that a Level 1 individual could.

READING

Table 3 Reading: Dimensions

Reading: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Complexity of text interpretation	Task requires: Reading relatively short texts to locate a single piece of information. Following simple written directions.	Task requires: Reading more complex texts to locate a single piece of information or read simpler texts to locate multiple pieces of information. Making low-level inferences.	Task requires: Choosing and integrating information from various sources or from several parts of a single text. Making low-level inferences from multiple sources. Identifying relevant and irrelevant information.	Task requires: Integrating and synthesizing information from multiple sources or from complex and lengthy texts. Making complex inferences and use general background knowledge. Evaluating quality of text.	Task requires: Interpreting dense and complex texts. Making high-level inferences and use specialized knowledge.
Complexity of document(s)	Document is very simple. Brief text combined with uncomplicated structure (e.g., simple signs, labels, lists). One document and one document type.	Document is simple. Multiple pieces of information (e.g., simple tables with a small amount of information, no subparts). One document or multiple documents of the same type.	Document is somewhat complex. Multiple pieces of information organized in sections with sub-headings or subparts (e.g., complex tables); Or may be multiple simple documents which may include more than one document type (e.g., pie chart and bar graph). May be specialized document types (i.e., familiarity with the document type is required for interpretation).	Document is complex. Multiple pieces of information organized in multiple sections with one additional component, such as colour coding, scale, perspective and symbols (e.g., complex paint charts, floor plans); Or multiple documents and multiple types. Specialized document types (i.e., familiarity with the document type is required for interpretation). E.g., Pareto charts, isometric drawings, Gantt charts.	Document is complex. Multiple pieces of information organized in multiple sections with two or more additional components, such as colour coding, scale, perspective and symbols (e.g., intricate aerial maps, isometric drawings); Or multiple documents and multiple types. Specialized document types (i.e., familiarity with the document type is required for interpretation). E.g., Pareto charts, isometric drawings, Gantt charts.
Complexity of finding information	Limited search, using key words, numbers, symbols, or other visual characteristics (e.g., line, colour, shape) to locate information. Minimal inference is required. Information found in the document is a literal match (i.e., identical) to the information required. Information needed is immediate and obvious.	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). A low level of inference is required. Information found in the document(s) is a synonymous match (i.e., obviously related) to the information required. Information needed is fairly evident.	Locating one or more pieces of information using: multiple search criteria; Or the results of one search in a subsequent search (e.g., finding the chemical composition of paint from its label and then using that information to search Material Safety Data Sheets). A moderate degree of inference is required. The match between the information found in the document(s) and the information required may be ambiguous	Locating multiple pieces of information using: multiple search criteria which may have to be developed by the user; Or the results of one search in a subsequent search. Considerable inference may be required. Match between the information found in the document(s) and the information required is ambiguous. One or more distractors may hinder the process of finding and/or entering the correct information. The information needed may be mentally restructured into categories devised by the user.	Locating multiple pieces of information using: multiple search criteria which may have to be developed by the user; Or the results of one search in a subsequent search, possibly based on criteria developed by the user. A high level of inference is required. The match between the information found in the document(s) and the information required is ambiguous. Multiple distractors may hinder the process of finding and/or entering the correct information. The information needed is mentally restructured into categories devised by the user.

Reading: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Complexity of information use	No knowledge of the content (i.e., substance) of the document is required to use the information. No analysis required. Information is used in the form it is found.	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).	Some knowledge of the content (i.e., substance) of the document is required to use the information. Some analysis required involving selection and integration of information. Information found in the document(s) must be integrated (e.g., integrate information from two diagrams in a repair manual to troubleshoot the problem).	Specialized knowledge of the content (i.e., substance) of the document may be required. Multiple pieces of information from multiple sources are synthesized. The quality of information may be evaluated for accuracy and omissions. Information found in the document(s) is synthesized and possibly evaluated (e.g., weather forecasting using data synthesized from many sources and evaluated as to its accuracy).	Specialized knowledge of the content (i.e., substance) of the document is required. Information is evaluated to make judgements of quality based on criteria and/or to draw conclusions (e.g., critique research data to note methodological flaws).

Table 4 Reading: Proficiency Statements

Reading: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Identify the task that requires you to read	Identifies simple reading tasks in everyday situation, especially with familiar cues like pictures (e.g., following directions on a medicine bottle). Is learning to recognize when reading is helpful to achieve a goal (e.g., recipe to cook) and the purposes of reading (e.g., fun versus instructions).	Identifies when reading is needed in familiar situations (e.g., instructions, schedules). Understands different purposes of reading (e.g., find information, follow steps), and how it is used to achieve goals (e.g., take a bus somewhere).	Identifies reading tasks in daily work, learning, and life. Understands reading can have multiple purposes (e.g., reading instructions for safety or efficiency) and contribute to achieving broader goals (e.g., completing a task, making a decision). Recognizes that different types of documents (e.g., instructions, charts), can serve the same purpose.	Evaluates the need for reading in complex situations that require analysis and synthesis of different types of documents (e.g., choosing investments, comparing research). Recognizes multiple complex purposes for reading (e.g., comparing viewpoints, data analysis) and how reading broadly supports long-term goals (e.g., career, new skills).	Anticipates the need to read in complex and unfamiliar situations that require integrating complex or intricate documents (e.g., interpreting legal documents or aerial map with legend). Recognizes nuanced purposes for reading (e.g., identifying author bias, evaluating credibility) and how reading supports deeper understanding and personal growth.
2. Identify the information contained in the document(s)	Locates explicitly stated information (e.g., names, dates) in simple or familiar texts using literal matching or prominent visual cues (e.g., pictures, headings).	Uses scanning and skimming to find details in simple documents or familiar formats (e.g., recipes). Is beginning to identify key details in short texts and distinguish between important and irrelevant details.	Uses scanning and skimming techniques to find key points in various document types (e.g., articles with sections, tables). Differentiates between important and irrelevant information. Uses multiple documents of the same type to gather information on a topic.	Selects appropriate strategy (e.g., scanning, skimming, close reading) to find key points and supporting details from complex documents that can include features like colouring coding and scales (e.g., research reports, technical manuals). Uses multiple types of documents to pull out relevant information on a topic.	Uses structure and organization of complex documents (e.g., legal documents, aerial map with legend) and advanced reading strategies (e.g., cross-referencing, interpreting footnotes) to extract detailed, nuanced, and implied information. Uses multiple complex types of documents to pull out relevant information to synthesize.
3. Make connections between different parts of the document	Identifies simple connections between pictures and words, understanding the meaning behind signs and labels. Recognizes connections between steps of instructions with support. Shows some limited understanding of basic structure of familiar or simple texts (e.g., beginning, middle, end).	Identifies basic relationships in familiar or simple texts such as cause-and-effect and chronological order. Recognizes basic text structures and transitions (e.g., "first", "however").	Identifies complex relationships such as problem-solution, category-example, and compare-contrast in different document types. Understands how transitions and organizational structures connect ideas. Is beginning to connect information across multiple documents of a similar type or topic.	Identifies complex relationships in complex document types and formats, including information presented in different ways (e.g., text, graph). Integrates information from multiple documents to identify complex arguments and reasoning (e.g., cause-and-effect chains) and how information fits together to create a whole picture.	Identifies intricate and subtle relationships in diverse document types and formats, including implicit ideas or assumptions, counterarguments, detailed annotations, and inconsistencies. Synthesizes information from multiple documents of different types to identify overarching themes, arguments, or solutions.

Reading: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
4. Understand and apply the information	Understands literal meaning of simple texts and follows clear instructions in familiar situations. Is learning to sort or compare information with support.	Understands the main idea of simple texts, follows clear instructions, and makes basic inferences based on explicitly stated information. Compares and contrasts simple details and sorts information based on clear categories. Summarizes key points in simple sentences and applies information to complete routine tasks.	Understands a wide variety of documents, makes inferences based on context and prior knowledge, compares and contrasts similar information, analyzes and categorizes information, and summarizes in short paragraphs. Applies information to complete tasks requiring some analysis and decision-making.	Understands various complex documents with additional features (e.g., colour coding, scale), makes complex inferences based on implied information, compares and contrasts information in different formats (e.g., text, charts), analyzes the underlying message, sorts information based on complex criteria, and summarizes in clear and concise way. Adapts information to complete complex tasks requiring critical thinking and problem-solving.	Understands intricate and nuanced documents with multiple additional features (e.g., interprets underlying assumptions or biases in a technical report with data visualizations). Makes complex inferences based on subtle and implicit cues, author bias, and external knowledge. Sorts complex information into novel categories to identify patterns and solutions. Summarizes in effective way that demonstrates deep understanding. Adapts information creatively to solve problems or complete complex tasks.
5. Evaluate the document(s)	Recognizes purpose of simple documents like signs, labels, or instructions. Looks to others to assess information credibility.	Recognizes purpose and tone of basic document types (e.g., instructions versus stories, informative versus persuasive). Relies on familiar sources for credibility. Questions information based on common sense and logic. Recognizes some biases from known biased sources (e.g., advertising).	Evaluates the purpose and tone of a range of different document types. Evaluates information for relevance to a task. Questions where information comes from and if it might be biased. Examines the credibility of sources based on their reputation and content consistency.	Evaluates how documents are structured (e.g., purpose, tone, organization) and how it affects the message. Critically assesses the credibility and relevance of complex information by considering the source expertise, potential bias, misleading information, and evidence provided.	Evaluates the underlying structure and techniques (e.g., logical fallacies, emotional appeals) used in complex documents across diverse sources to achieve its purpose and influence the audience. Critically assesses the credibility, truthfulness, and relevance of information considering evidence and reasoning, hidden messages or potential agendas, and using advanced techniques (e.g., fact-checking websites, cross-referencing).
6. Reflect on the document(s)	Recognizes the intended audience for clear signs and labels (e.g., stop sign is for drivers). Identifies the audience for simple texts and with support.	Recognizes the intended audience for familiar documents (e.g., new article, children's books) using clues like simple or complex vocabulary and visuals. Notices differences in language used to achieve a goal (e.g., persuasion) with support.	Recognizes the intended audience for different document types and how authors use language (e.g., simple, technical), visuals, and evidence (e.g., facts, statistics) to achieve their purpose.	Recognizes how authors use more complex language techniques (e.g., tone, figures of speech, level of detail, specialized terminology), organizational structures, persuasive tactics, and evidence to achieve their purpose. Identifies intended audience from analysis of these characteristics.	Recognizes how authors use sophisticated language techniques (e.g., rhetorical devices, figurative language) and diverse evidence (e.g., research or historical data) to achieve their purpose and influence their intended audience in specific ways. Considers how author's expertise, bias, cultural references, and chosen language influences the intended audience.

Table 5 Reading: Overarching Descriptors

Reading: Overarching Descriptors					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Overarching descriptors	Can read short texts or use simple documents to find a single piece of information, or follow simple written directions. Can find information that is an exact match to the information required, and use it in the form it is found.	Can find a single piece of information in a more complex text or multiple pieces of information in a simpler text or document. Can find information that is closely related to the information required (e.g., a synonym) and rearrange it to make simple comparisons.	Can integrate information from different texts or documents, or from several parts of a more complex text or document. Can make inferences to find and integrate information that is not an obvious match to the information required.	Can integrate, synthesize, and evaluate information from multiple sources, different types of documents, or complex and lengthy texts. Can make inferences to find and integrate information that matches what it is required, even when some distracting or unclear information is present.	Can interpret dense and complex texts and documents, and use specialized knowledge to critique and evaluate quality. Can make inferences to find and integrate information that matches what it is required, even when multiple distractors are present.

WRITING

Table 6 Writing: Dimensions

Writing: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Length and purpose	Less than a paragraph, intended to organize, remind, or inform.	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. May involve making recommendations.	Longer pieces of writing which present an evaluation or critique, usually accompanied by recommendations. Writing tasks of any length which demand originality and effectiveness.
Style and structure	Pre-set formats exist (e.g., forms), or the format is unimportant for the writing or document creation task. Requires informal style for small familiar audiences.	Templates or models exist for the writing or document creation task, such as memos and letters in set formats. Requires a more formal style. The writing sets a tone which is appropriate for the occasion, e.g., friendly, respectful, authoritative, etc.	An established format exists for the writing or document creation task, such as a contract, lease, financial report, or job description. The format may call for structural elements such as headings, a table of contents, footnotes, etc.	The writing or document creation may require modification of an existing format, such as a proposal or a report, to fit the given information. Consideration of the audience may be an important part of the writing task at this level.	The writing or document creation task requires complex, multi-part format to accommodate varied content. Appropriate tone and mood may be as important as the content.
Quality and clarity	Task requires simple sentences (subject-verb-object) with correct verb conjugation (present, past tenses) and basic punctuation (periods, commas).	Task requires sentences with adjectives and adverbs to add details. Connecting words (and, but, because) are needed to create basic cohesion.	Task requires complex sentences with dependent clauses (who, which, when) to explain relationships between ideas. Transition words (however, therefore) are needed to connect paragraphs and show logical flow.	Task requires a variety of sentence structures to create voice and style. A wider range of connecting words and phrases is needed to convey arguments and analysis.	Task requires a diverse range of complex sentence structures, including those with embedded clauses, varied verb tenses, and passive voice for specific effects. Figurative language and rhetorical devices (metaphors, similes) are needed to convey nuances.
Content	Concrete, day-to-day, matters of fairly immediate concern.	Routine, with little variation from one instance to the next.	Non-routine, but is readily available from established sources.	Abstract and technical, may involve gathering and selecting information from multiple sources, may involve re-writing or transformation for a specific audience (e.g., rewrite technical reports for a non-specialist audience)	The content must be created or synthesized from multiple sources
Complexity of entering non-numerical information (originally Document Use)	Task requires entering few pieces of non-numerical information (text, symbol, code). Minimal inference is required. Information entered in the document is a literal match (i.e., identical) to the information required. Information needed is immediate and obvious.	Task requires entering several pieces of non-numerical information (text, symbol, code). A low level of inference is required. Information entered in the document(s) is a synonymous match (i.e., obviously related) to the information required. Information needed is fairly evident.	Task requires entering multiple pieces of non-numerical information (text, symbol, code). A moderate degree of inference is required. The match between the information found or entered in the document(s) and the information required may be ambiguous.	Task requires entering multiple pieces of non-numerical information (text, symbol, code). Considerable inference may be required. Match between the information entered in the document(s) and the information required is ambiguous. One or more distractors may hinder the process of entering the correct information. The information needed may be mentally restructured into categories devised by the user.	Task requires entering multiple pieces of non-numerical information (text, symbol, code). A high level of inference is required. The match between the information entered in the document(s) and the information required is ambiguous. Multiple distractors may hinder the process of entering the correct information. The information needed is mentally restructured into categories devised by the user.

Writing: Dimensions					
Complexity of information use (originally Document Use)	No knowledge of the content (i.e., substance) of the document is required to enter the information. No analysis required. Information is entered in the form it is found.	Limited knowledge of the content (i.e., substance) of the document may be required to enter the information. Limited analysis required. Information available may be rearranged for entry onto the document (e.g., rearrange alphabetically listed contacts into a listing by province.)	Some knowledge of the content (i.e., substance) of the document is required to enter the information. Some analysis required involving selection and integration of information. Information must be combined for entry onto the document (e.g., completing a monthly quality control form by integrating information from several production lines.)	Specialized knowledge of the content (i.e., substance) of the document may be required. Multiple pieces of information from multiple sources are synthesized. The quality of information may be evaluated for accuracy and omissions. Information must be synthesized for entry onto the document (e.g., preparing tax returns using data from many sources.)	Specialized knowledge of the content (i.e., substance) of the document is required. Information is evaluated to make judgements of quality based on criteria and/or to draw conclusions (e.g., critique research data to note methodological flaws.)

Table 7 Writing: Proficiency Statements

Writing: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Identify the task that requires you to write	Can write short pieces and recognize basic writing tasks (e.g., filling out forms, writing simple emails). Can follow instructions for simple writing tasks, but they may need help with understanding the purpose or topic.	Can independently identify and complete basic writing tasks in everyday situations (e.g., sending emails, taking notes, sending a follow-up email after a meeting). Can create short written pieces (e.g., a paragraph or longer) for various purpose and identify the main topic and general goal (e.g., inform, request).	Can identify the goal and audience of writing (e.g., persuade for a course of action, propose solutions). Can independently figure out what kind of writing is needed based on the situation and can use resources (e.g., templates, guides, examples of past work) to understand the purpose and audience better.	Can identify the goals and target audience and choose the appropriate approach, format, and style for different writing needs. Can understand and differentiate between nuanced writing purposes (e.g., persuading vs. advocating, summarizing vs. critiquing).	Can identify the need for written communication in complex situations or for highly specialized audiences, and develop the most effective writing approach (evaluation, critique, or original idea with recommendations). Writing demonstrates a deep understanding of the topic, considers potential biases, and achieves complex goals like informing, persuading, or evoking emotions.
2. Plan the writing task	Can follow clear instructions and complete tasks with provided structures (e.g., template, outline). Can identify basic information for short messages, using readily available resources, and can adjust the level of detail based on the audience. With support, can plan the overall structure and length of their writing.	Can identify key information for tasks and adjust details based on the audience. Can plan simple writing with a clear structure, gather information from common sources, and brainstorm ideas with some prompting.	Can effectively plan writing and brainstorms and explores connections between ideas. Can find the important information from various sources and tailor their message to a specific audience considering their knowledge and needs (e.g., team members, manager, external stakeholders). Can organize their thoughts into a clear outline with supporting points and logical flow. Adapts the level of detail to the specific audience and purpose.	Can plan and outline complex writing projects. Can find all relevant information, using various sources like research and expert opinion. Generates a variety of well-developed ideas, considering strengths and weaknesses. Can create a detailed outline with clear structure and transitions and critically evaluates the required length and detail, and tailor content for the audience (e.g., consider audience demographics, background knowledge, and potential reactions to determine tone and level of formality).	Can identify and synthesize important information from a broad range of sources, including advanced research and expert opinions. Generates highly creative and insightful ideas through critical thinking, analysis, and can create well-structured arguments and sophisticated outlines, anticipating potential arguments and counterarguments. Tailors their writing to specific audiences and effectively plans original and creative pieces.
3. Use written words and phrases so you can achieve the purpose of the writing task	Can write simple sentence structures. There may be frequent errors in spelling, punctuation, and grammar that can make the writing unclear (e.g., incorrect verb tense, subject verb disagreement). Handwriting may be difficult to read.[1]	Understands and correctly applies basic grammar rules. There are occasional errors in spelling, punctuation, and grammar, but they are minor and don't hinder understanding (e.g., tense inconsistencies). Can produce legible handwriting.	Can use accurate spelling, punctuation, and grammar for clear and professional communication with occasional minor errors. Uses punctuation effectively to enhance clarity and meaning. Handwriting is clear and easy to read.	Uses flawless spelling, punctuation, and grammar to convey complex ideas with a professional tone. Punctuation is used strategically to enhance flow, meaning, and impact. Handwriting is neat and professional.	Uses flawless punctuation and grammar for clear, persuasive, and impactful communication. Leverages punctuation for precise meaning, stylistic effects, and reader engagement. Demonstrates a mastery of grammar rules, including proper use of tense, mood, and voice. Handwriting is exceptional.

[1] Handwriting may become obsolete over time.

Writing: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
4. Choose the appropriate language and style for the writing task	Can use basic vocabulary and sentence structures. Uses a single, basic writing style for all tasks and may have difficulty understanding the difference between formal and informal writing. May include irrelevant information or lack necessary details.	Can understand the difference between formal and informal language, but may still make mistakes when adjusting their writing style based on audience and situation. Can write for basic purposes (e.g., sharing information or storytelling), and are starting to try different approaches (e.g., persuasion). Can write using a wider range of vocabulary but rarely uses technical terms.	Can use formal or informal language, depending on the situation, and employ various writing styles like persuasion, narration, or description to achieve specific goals. Includes evidence and technical vocabulary, when appropriate, to create clear and effective communication tailored to the reader.	Can adapt writing style to any situation and strategically apply a range of writing styles (e.g., persuasive or informative, technical or creative) depending on the audience and purpose. Uses strong evidence, and a rich and varied vocabulary to precisely convey meaning and tone.	Crafts unique styles that blend different forms, all tailored to a specific audience and purpose. Their writing is impactful and original, using advanced persuasive techniques, strong evidence, sophisticated vocabulary (including precise technical language) to create a powerful voice. Can seamlessly switch between formal and informal writing, manipulating tone and style with artistry.
5. Choose the appropriate format for the writing task	Writes using simple formats (e.g., paragraph, simple list), potentially with assistance. Can complete pre-made documents (e.g., fill in forms) with clear instructions and some assistance.	Writes using basic structures like paragraphs and bullet points. Can include simple visual aids (e.g., table, simple charts) and use preformatted workplace documents with clear instructions. Understands the purpose of formatting for clarity and uses it for simple tasks.	Can independently create well-structured documents using paragraphs, headings, and relevant visual aids (charts, tables, graphs) to effectively present information. Confidently uses and adapts pre-existing workplace documents (e.g., customizing memo boards).	Can use various techniques like headings, bullet points, and visuals (e.g., charts, tables, graphs) to present information clearly, logically, and in an appealing way. Can adapt existing formats and create new ones to fit the content and audience.	Organizes information with a clear hierarchy and logical flow using paragraphs, headings, subheadings, and other elements. Creates or selects sophisticated visual aids (e.g., complex charts, graphs) that effectively complement and clarify written content, anticipating reader needs and using advanced formatting strategies (e.g., call to action boxes, white space management). Can customize pre-existing formats and innovate formatting techniques to improve user experience.
6. Review and revise your writing	Can identify common spelling mistakes and some grammatical errors, (e.g., missing punctuation) using spellcheck. May not actively revise writing and rely on others to identify errors in clarity, meaning, or tone.	Can revise basic grammar and spelling but might miss deeper issues in clarity or tone. Seeks feedback and incorporates suggestions to improve clarity, meaning, and tone, with some success.	Can revise and proofread writing to ensure it's accurate, clear, and well-suited to the audience. Can fix grammar, spelling, and make sure the information flows logically. Can also adjust the writing style to fit the intended purpose (e.g., making it more professional or casual).	Meticulously revises and proofreads writing for clarity, impact, and professionalism. Can identify and fix grammatical errors, ensure logical flow, and tailor the tone to the audience. Actively seeks feedback and conducts research to ensure the writing is accurate, persuasive, and achieves its intended purpose.	Revises for maximum clarity, impact, and originality of ideas, identifying subtle errors and stylistic inconsistencies. Optimizes structure, flow, and word choice tailored to the target audience. May seek external feedback to refine the tone and overall impact for the target audience

Table 8 Writing: Overarching Descriptors

Writing: Overarching Descriptors					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Overarching descriptors	Can write less than a paragraph on concrete, day-to-day topics in informal style, to organize, remind, and inform familiar audiences. Can use simple sentences and basic punctuation. Can enter non-numerical information (i.e., text, symbol/code) that is an exact match to the information required and use it in the form it is found.	Can write brief text a paragraph or longer on routine content, in a more formal style and with a pre-set format, to serve various purposes. Can use longer sentences and connecting words (and, or) to show cohesion. Can enter non-numerical information (i.e., text, symbol/code) that is closely related to the information required (e.g., a synonym), and rearrange it as needed.	Can write short or long text on non-routine but readily available content, in a pre-set format with more complex structure, to inform, explain, request information, express opinions, or give directions. Can use complex sentences with dependent clauses and transition words (however, therefore). Can make inferences to enter and integrate non-numerical information that is not an obvious match to the information required.	Can write longer text on abstract and technical content, in a format that may need to be adapted to meet audience needs, to compare, analyze or recommend. Can use a variety of sentence structures to create style and voice and convey arguments and analysis. Can make inferences to enter and integrate non-numerical information that matches what it is required, even when some distracting or unclear information is present.	Can write longer text on original content, in a complex, multi-part format and with an appropriate tone, to evaluate, critique and recommend. Can use a diverse range of complex sentence structures, metaphors, and rhetorical devices to convey nuances. Can make inferences to enter and integrate non-numerical information that matches what it is required, even when multiple distractors are present.

NUMERACY

The proficiency materials for numeracy include tables with sample numeracy tasks, in addition to the dimensions, proficiency statements, and overarching descriptors. These example tasks are taken directly from the Essential Skills Readers' Guide (see pages 40-49 in the linked document), and serve as an addition source of examples that illustrate the implementation of numeracy skills in real-world tasks. Note that the first set of example tasks are described at five levels, and the second set (i.e., Numerical Estimation) are described at four.

Table 9 Numeracy: Dimensions

Numeracy: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Operations required	Only the simplest operations are required and the operations to be used are clearly specified. Only one type of mathematical operation is used in a task.	Only relatively simple operations are required. The specific operations to be performed may not be clearly specified. Tasks involve one or two types of mathematical operation. Few steps of calculation are required.	Tasks may require a combination of operations or multiple applications of a single operation. Several steps of calculation are required.	Tasks involve multiple steps of calculation.	Tasks involve multiple steps of calculation. Advanced mathematical techniques may be required.
Translation	Only minimal translation is required to turn the task into a mathematical operation. All information required is provided.	Some translation may be required or the numbers needed for the solution may need to be collected from several sources. Simple formulae may be used.	Some translation is required but the problem is well defined. Combinations of formulae may be used.	Considerable translation is required.	Numbers needed for calculations may need to be derived or estimated; approximations may need to be created in cases of uncertainty and ambiguity. Complex formulae, equations or functions may be used.
Complexity of entering numerical information (originally Document Use)	Task requires entering few pieces of numerical information. Minimal inference is required. Information entered in the document is a literal match (i.e., identical) to the information required. Information needed is immediate and obvious.	Task requires entering several pieces of numerical information. A low level of inference is required. Information entered in the document(s) is closely related to the information required (e.g., measurement in different metric systems). Information needed is fairly evident.	Task requires entering multiple pieces of numerical information. A moderate degree of inference is required. The match between the information found or entered in the document(s) and the information required may be ambiguous.	Task requires entering multiple pieces of numerical information. Considerable inference may be required. Match between the information entered in the document(s) and the information required is ambiguous. One or more distractors may hinder the process of entering the correct information. The information needed may be restructured into categories devised by the user (e.g., graphs, charts).	Task requires entering multiple pieces of numerical information. A high level of inference is required. The match between the information entered in the document(s) and the information required is ambiguous. Multiple distractors may hinder the process of entering the correct information. The information needed is restructured into more complex categories devised by the user (e.g., multiple complex or specialized graphs)

Table 10 Numeracy: Proficiency Statements

Numeracy: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Identify the task that will require you to use numeracy	Can follow instructions to do simple tasks that require numeracy (e.g., counting, entering phone number or age on a form) and see everyday situations where calculations are needed (e.g., adding grocery costs, calculating amount of change). Recognize situations where a specific number is the answer but may not specify units (like dollars or meters).	Can identify and solve tasks requiring basic calculations or math skills. Understands key words (e.g., "total", "difference") and provides answers as numbers with units (e.g., dollars).	Can identify and solve real-world problems requiring math using basic operations and can solve more complex problems with clear instructions. Can independently figure out what needs to be calculated and understands that answers can take different formats and involve choosing between options based on the data.	Can translate complex real-world situations into mathematical problems and identify hidden math in everyday situations (e.g., comparing loan options with different interest rates, calculating travel time with multiple stops). Can break down these problems into smaller steps with calculations and identify what the final answer should look like.	Can identify problems that require advanced math for best solutions (e.g., compound interest) and choose the right tools (percentages, formulas) to solve them efficiently. Identifies when the answer requires critically evaluating the accuracy and relevance of numerical information.
2. Identify the mathematical information	Can find basic numbers and symbols easily (e.g., prices on lists or tags), but may have difficulty finding numbers in longer passages without guidance. Developing skills to locate relevant numbers by scanning and skimming text (e.g., finding a specific code or price in flyers).	Can translate word problems into math operations. Can find important numbers in written text or tables by scanning for specific details or skimming for relevant numbers in short passages (e.g., receipt, recipe amounts) and identify basic math words used with numbers (e.g., "total" and "discount").	Can quickly pick out key details, concepts, and math symbols and combine numerical information from various sources (e.g., receipts, financial reports, or product descriptions).	Can translate information into mathematical terms, skim text for numerical information, interpret charts and graphs, and recognize hidden math (e.g., ratios in recipes, identifying scale on graph to interpret data). Can re-organize data, identify relevant numbers, and separate important information from unimportant information in complex documents (e.g., extract relevant information from financial reports).	Can combine information from different sources to see the bigger picture. Critically evaluates the accuracy and relevance of the information they find. Can identify missing data and handle uncertainty by estimating and approximating, restructure raw data for easier analysis, and judge the accuracy of complex numerical information (e.g., statistical models).
3. Make connections between related pieces of mathematical information	Can understand simple relationships between numbers (e.g., price and cost). Can enter data accurately when there's a clear connection to the source (e.g., copying a phone number) but may have difficulty with interpreting numerical information in context (e.g., understanding a price on a flyer).	Can understand basic relationships between numbers (e.g., tip depends on bill amount and percentage) and use known information to solve for simple unknowns (e.g., unit conversions, use discount rate to find final price). Can connect calculations to their results (e.g., adding ingredients gives total quantity).	Can use multiple formulas to solve problems. Can find connections between different pieces of information to solve for unknowns (e.g., use distance and speed to find arrival time) and use known information to calculate something new (e.g., use budget information to calculate remaining spending allowance).	Can apply complex math concepts to solve real-world problems (e.g., finances, return investment rates). Analyzes relationships between various data points and understands how they influence the overall picture (e.g., comparing loan options by relating interest rates, loan terms, and total repayment amounts).	Can find hidden patterns and connections within complex datasets. Uses advanced mathematical concepts to analyze trends, predict future outcomes, and make informed estimations, even in situations with incomplete information.
4. Apply mathematical operations and tools you will need to answer the question	Can do basic math with instructions and guidance. Can use a calculator for simple tasks (e.g., adding grocery prices), but may have difficulty with estimating amounts or measurements. .	Can use addition, subtraction, multiplication, and division for everyday tasks with more than one step (e.g., finding the final price after a discount by looking flyer price, discount, tax). Can use a calculator and estimate amounts with some guidance. Can convert units based on charts and use basic math to prepare data for entry (e.g., calculating total cost by multiplying price and quantity).	Can do calculations by hand or with tools like calculators and spreadsheets. Can estimate answers, use formulas, and put together a series of calculations to solve multi-step problems. Can prepare data for analysis or data entry by doing calculations like finding averages.	Can solve complex problems that involve percentages and ratios and can enter and manipulate data using formulas and calculations. Are comfortable using various tools like financial calculators or statistical software to analyze data and solve problems. Can estimate results, choose the right tools and operations, and adapt their approach based on the specific situation.	Can use advanced math, statistics, and software to solve complex problems. Can handle missing data, analyze trends, and make optimal decisions using tools like financial modeling software and advanced statistical analysis.

Numeracy: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
5. Interpret and evaluate the information	They can follow instructions and complete basic tasks but may need help understanding the bigger picture. Can enter data and recognize if it's obviously wrong (e.g., entering an age of 150), but may not always correctly check for reasonableness when solving real world problems.	Can apply basic knowledge to interpret results and recognize when more information is needed. Can spot clear errors in data (e.g., negative cost, misplaced decimal point) and check if answers make sense in context (e.g., checking if a calculated tip amount seems reasonable).	Can spot errors in data (e.g., noticing a measurement unit mismatch in a calculation), judge if results seem sensible, and interpret the results. Recognizes that data might not be perfect (e.g., estimated travel times or costs) and factors that into calculations (e.g., by providing a total range). Can enter information carefully and see how new data influences the final outcome.	Considers the source, potential biases, and limitations of the data and information presented. Analyzes the meaning and implications of results within a broader context (e.g., interprets trends in sales figures to inform future business decisions). Considers how the information they put in might affect the outcome (e.g., recognizing the limitations of a small sample size).	Checks for accuracy, completeness, and potential errors in data. Considers different perspectives and limitations when interpreting results and acknowledges the impact of data manipulation and limitations on conclusions.
6. Share the mathematical information, results, and implications	Can share basic findings in a straightforward way (e.g., verbally state a grocery total), without going into details. May use basic visuals (e.g., pointing to the total on the receipt).	Can communicate basic results from calculations, both in writing and verbally. Can provide the answer itself and can explain it in that context (e.g., why a certain tip amount is appropriate). Can share multiple pieces of numerical information in a clear way, possibly using simple visuals like charts or tables.	Can clearly explain findings and their importance, both in writing and speaking. Can present numerical information effectively using tools like tables, charts, and graphs, highlighting key points and relationships. Considers different needs of their audience and chooses the best way to convey the information (e.g., reports, presentations).	Can effectively communicate complex mathematical information. Can break down calculations and results for different audiences (e.g., written reports, presentations) using clear language and visuals (charts, graphs, diagrams). Considers the limitations (e.g., assumptions, fees) and tailors the complexity of their explanations to the audience's math skills. Can use advanced visuals (e.g., flowcharts) to explain intricate processes.	Can break down technical information for both specialists and non-specialists. Chooses the best way to communicate numerical information (e.g., a combination of reports, dashboards, interactive tools) based on the audience and uses clear visualizations (charts, maps) to show patterns and trends. Can explain uncertainties and limitations of the data and anticipate challenges in understanding and tailor their communication accordingly. Can even create complex visuals (e.g., simulations) to represent intricate data and its potential applications.

Table 11 Numeracy: Overarching Descriptors

Numeracy: Overarching Descriptors					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Overarching descriptor	Can complete one simple, clearly specified operation. Minimal translation is required to turn the task into a mathematical operation. All information required is provided. Can enter numerical information that is an exact match to the information required, and use it in the form it is found.	Can complete relatively simple operations that may not be clearly specified and may required few steps of calculation. Some translation may be required or the numbers for the solution may need to be collected from several sources. Simple formulae may be used. Can enter numerical information that is closely related to the information required and rearrange it as needed.	Can complete a combination of operations or multiple applications of one operation, with several steps of calculation. Some translation is required but the problem is well defined. Combinations of formulae may be used. Can make inferences to enter and integrate numerical information that is not an obvious match to the information required.	Can complete tasks that involve multiple steps of calculation. Considerable translation is required. Can make inferences to enter and integrate numerical information that matches what it is required, even when some distracting or unclear information is present.	Can complete tasks that involve multiple steps of calculation and advanced mathematical techniques. Numbers needed may need to be derived, estimated, or approximated in cases of uncertainty. Complex formulae, equations, or functions may be used. Can make inferences to enter and integrate numerical information that matches what it is required, even when multiple distractors are present.

Table 12 Numeracy: Sample tasks

These sample tasks are taken directly from the Essential Skills Readers' Guide to provide further support to generate numeracy proficiency statements.

Sample tasks in various application settings					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Money math	Enter amounts in a cash register. Total simple bills. Make change. Receive payments.	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., cost price plus % mark up or regular price minus % mark down.	Total bills/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, deduction schedules, bonus calculations, etc.	Make mental calculations involving considerable translation with a high degree of speed and accuracy.	Forecast prices when the critical factors must be estimated based on an analyses of past indicators and projections of future trends.
Scheduling or budgeting and accounting math	Record costs against categories of budgets. Monitor schedules or budgets reporting overruns and surpluses. Make entries in financial records.	Determine number of packages to buy, based on the number of units required (e.g., how many packages of 30 tiles should be purchased if 196 tiles 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.	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.	Plan and monitor schedules and budgets for small or short-term projects. Audit financial records to determine accuracy and adherence to financial procedures.	Determine budgets and schedules for multi-faceted or multi-phase projects. Compare long-term investment alternatives where future rates of return are not known.
Measurement and calculation math	Take measurements through a one-step process and record the results, e.g., clerk weighs mail and records the results in the mail book. Measure out quantities, e.g., four gallons of paint. Set instruments to particular angles and other numeric settings.	Calculate areas and volumes of simple, familiar shapes. Convert between measurement systems or between units in one system, e.g., inches to millimetres. Calculate and weigh out or measure out quantities or volumes involving doubling, quadrupling, halving, quartering, etc. some given amount or sets of amounts.	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).	Calculate areas and volumes of complex, irregular shapes. Calculate the numbers of units of fixed dimensions required to cover irregular areas, e.g., tiles for an irregular shaped floor or shingles for an irregular shaped roof.	Make indirect measurements (e.g., using trigonometry, geometry). Devise estimates and make indirect calculations of measurements that cannot feasibly be taken directly.
Data analysis math	Make simple comparisons such as identifying what is higher or lower, bigger or smaller.	Calculate basic summary measures (e.g., averages).	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.	Determine and calculate appropriate descriptive statistics (e.g., rates). Decompose a difference in rates between two populations.	Test hypotheses. Explore causal relationships – their strength, their significance, the effect of controls. Modeling inter-relationships of sets of variables. Make projections. Conduct analyses employing mathematical modeling.

Numerical estimation					
Whether there is a set procedure	There is a formula. It identifies the variables and how they are to be combined.	There is a formula, but it does not incorporate all of the variables.	There is no formula, but an approach has been developed, possibly by having to perform the task repeatedly.	There is no formula and no established approach is available.	-
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.	Many factors, but a routine has been established.	Many factors involved and the methodology for making the estimate must be developed by the worker.	-
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.	Information about significant factors that make up the estimate is uncertain; several complications are possible, but they are constrained in their impact.	Little or no information about significant factors that make up the estimate; the factors may have to be estimated. Many complications are possible and they may not be constrained in their impact.	-
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.	Estimation errors have significant consequences, e.g., significant loss of money or time, but can be rectified.	Estimation errors have significant consequences that are not rectifiable or only rectifiable at significant cost.	-
Degree of precision required	Little or no precision required.	Precision required within relatively wide range of values.	Precision required within a small range of values	High degree of precision required.	-

DIGITAL

Digital skills incorporate elements of other Skills for Success (e.g., Collaboration, Problem Solving) conducted in a digital environment. The Digital dimensions and proficiency statements relate to the unique competencies required to facilitate the ability to perform other skills ***in a digital space***. For example, the dimension "Digital interactions" relates to using digital tools to establish a collaborative environment, rather than the collaboration activities themselves.

Table 13 Digital: Dimensions

Digital: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Availability of instructions	Detailed, clear instructions are provided for single-step tasks (e.g., send an email, search the web for specific information).	Instructions are provided for tasks with small series of steps (e.g., navigate the start menu, create a digital document, fill out a digital form). Some minimal decision-making is needed as the instructions may not cover all the steps.	Instructions or resources are available for multi-step tasks but needs to be searched for (e.g., attend a video conference using an unfamiliar platform, edit Word documents in a collaborative environment such as on SharePoint).	Instructions or resources are available for similar multi-step tasks if searched for, but may not be entirely relevant for all parts of the task. Some adaptation and problem-solving are required (e.g., provide IT support, manage a complex online project).	Limited instructions or resources are available for creative and innovative tasks that require advanced digital skills (e.g., design a website, develop software).
Use of digital technology (e.g., devices, and software)	Basic and widely used functions of common devices, software, and applications required to complete tasks (e.g., turn on phone, send email, open web browser, compose and email, make a call).	Simple functions and features of devices, software, and applications required to complete tasks (e.g., enter data in Excel, produce letters and memos in Word, check new emails in Outlook).	A range of advanced functions of common devices and software required to complete tasks (e.g., use formulas or pivot tables in Excel, set mail priority in Outlook, apply filter to search results).	A range of functions of advanced, specialized or occupation-specific devices and software or applications required OR little-used features of common software to required to complete tasks.	A wide range of specialized or occupation-specific and cutting-edge devices, software, or applications required to complete tasks, including those that require advanced digital skills (e.g., knowledge of different coding languages, applying AI and other emerging technological tools).
Tool selection	Tool choice is obvious and clear. Only one digital tool is relevant to the task, or if more than one is relevant, their difference is minimal and the risk of making the wrong choice is minimal.	Tasks require selection of the most suitable among two to three digital tools to complete a specific task.	Tasks require selection from a wider range of digital tools. Need to consider efficiency of the tools to make the appropriate choice (e.g., choose statistical software to automate data visualization).	Tasks require selection and integration of multiple digital tools to complete complex tasks (e.g., combine data from multiple sources into a single dataset using specialized statistical packages).	Tasks require customization, adaptation or creation of new digital tools to meet specific needs (e.g., script macros in Excel, build custom software applications, use OpenAI to complete tasks).
Digital interactions	Limited range of basic online interactions. Tasks require use of one or two familiar features on common digital platforms to participate (e.g., send emails in Outlook, send messages on phone).	Wider range of common digital interactions. Tasks require use of more features on common digital platforms to participate (e.g., join online meetings on Zoom or MS Teams, share documents via Google Drive, participate in online forum).	More complex digital interactions. Tasks require use of advanced features of existing digital tools to set up and participate (e.g., change Zoom or MS Teams settings to set up interactive and accessible webinars; set up sharing permissions on Google Drive; use moderator mode in online forum).	Far-reaching digital interactions with well-defined audience. Tasks require advanced, specialized, or occupation-specific digital tools to set up and manage (e.g., manipulate the administrator settings to set up and manage a virtual helpdesk to address students' technical questions in an online training program).	Specialized, unique, new and innovative digital interactions with unknown or unpredictable audience. Tasks require user to design new digital tools or integrate multiple tools to facilitate these complex interactions (e.g., integrate ChatGPT to improve the responsiveness of chatbots and virtual assistants businesses' websites).
Responsible information use	Tasks require finding and sharing information in digital environments. No verification or evaluation of quality of content required.	Tasks require verification of information to ensure relevance and usefulness (e.g., check file date to locate the most applicable version) before using or sharing.	Tasks require verification and evaluation of information for accuracy, reliability, and biases (e.g., read multiple online reviews, compare multiple sources) before using or sharing. Finding and synthesizing information from multiple sources may be required.	Tasks require analysis and evaluation of the quality of information to assess credibility, biases, and information gaps (e.g., verify the affiliation and credibility of websites) before selectively using or sharing. Multi-step searches and synthesis of information from multiple sources required.	Tasks require analysis and evaluation of information to identify credibility, biases, information gaps, and misinformation potentially generated by advanced technology (e.g., identify authentic versus AI-generated images). Critically select and describe limitations when using or sharing information (e.g., describe biases and identify unverified information). Systematic or multi-step searches (e.g., scoping review) required to fill the gaps and identify limitations.

Digital: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Privacy, security and safety	Tasks require following basic privacy and security strategies (e.g., use a password on devices and Wi-Fi, save documents on desktop). Require one device at a time.	Tasks require evaluating risks and implementing security strategies for common activities (e.g., determine appropriate content to post to social media) and to safeguard against common threats (e.g., avoid phishing scams, malware). Require multiple compatible devices and platforms and basic methods to back-up or transfer information (e.g., save copies of files on both laptops and USB).	Tasks require evaluating more complex risks, implementing advanced security measures (e.g., use multi-factor authentication) and using more advanced methods to identify and safeguard against threats (e.g., check website security certificates). Require multiple devices and platforms that may not be compatible (e.g., convert file formats for different e-readers) and more advanced methods to back-up and transfer information (e.g., use cloud systems).	Tasks require proactive steps to mitigate risks (e.g., download and use security software), and educating others on safety practices (e.g., provide tips and recommendations on privacy settings). Require the management, back-up, and transfer of sensitive information across systems using existing multi-step procedures.	Tasks require providing guidance and mentorship to lead others toward ethical and responsible digital behaviours (e.g., respect intellectual property rights online, prevent cyberbullying) and creating protocols to promote long-term sustainable data security, including in response to emerging technology (e.g., create protocols to manage and share data across departments, mitigate risks in OpenAI's mis-use). Require the creation of procedures to manage, back-up, and transfer sensitive information across systems.
Continuous learning and uptake of emerging technology	Tasks require the application of familiar digital tools and methods. May need to seek help when necessary (e.g., reach out to IT to help troubleshoot issues).	Tasks require new tools or methods, but learning resources are provided (e.g., take a course and apply knowledge at work).	Tasks require new tools or methods. Must identify relevant digital tools and search for and choose from a range of existing learning resources.	Tasks require uptake and innovative application of cutting-edge technology and (e.g., seek out new AI tools). Formal learning resources or established practices may not yet exist.	Tasks require the development of practices, procedures, and learning resources to support, guide, and mentor others to take up new tools, platforms and trends (e.g., find new applications for AI, use coding to improve existing tools, advocate for the importance of digital literacy).

Table 14 Digital: Proficiency Statements

Digital: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Use digital devices including computers, tablets, smart phones, and other handheld devices	Can use basic functions on familiar devices (e.g., turning them on, adjusting volume, and using simple apps). Understands the device's purpose but rely on clear labels, icons, and instructions for specific features. May need help with more complex tasks, security, or troubleshooting.	Can use common devices like phones and tablets for basic tasks (e.g., making calls, sending texts, browsing the web) and can navigate devices using menus and search functions. Understands common device terminology related to basic functions (e.g., "search bar," "app," "download"). May need help with new devices or unexpected situations.	Comfortably uses various devices to complete more complex tasks (e.g., downloading files, attending video calls). Can select the most efficient device based on the complexity of the task, considering factors like processing power and screen size (e.g., choosing a laptop for video editing over a smartphone). Finds and uses instructions (e.g., online tutorials, user manuals) to complete multi-step tasks on unfamiliar devices (e.g., setting up video conferencing software, transferring files between devices).	Chooses the most effective device or combination of devices, including specialized tools, to achieve goals. Applies existing knowledge of device functions to similar tasks on different devices. Adapts and troubleshoots using online resources or basic problem-solving skills when instructions are incomplete or not directly applicable. Understands technical terms related to advanced device features (e.g., "cloud storage," "virtual assistant," "multitasking") and can train others in device usage.	Can independently explore and implement advanced functionalities or settings to customize devices for specific needs. Integrates diverse devices and platforms to create new digital solutions (e.g., automating tasks, building custom dashboards) and can troubleshoot device compatibility issues and adapt their workflow accordingly. Champions the use of new devices through demonstrations, workshops, and resource creation for others.
2. Use common digital tools to complete tasks	With assistance or instructions, uses one or two familiar tools (e.g., apps, software) to complete simple tasks (e.g., formatting text in Word, entering data in Excel). May need help with updates, choosing the right tool, or using accessibility features.	Can independently use a small set of common tools (e.g., word processor, spreadsheet program, presentation software) for basic functionalities (e.g., creating a document, editing a spreadsheet, preparing a presentation with text and images). Can choose appropriate tools and update software with some guidance. Identifies basic accessibility features but may need guidance on using them effectively.	Comfortably uses a variety of digital tools for different purposes (e.g., word processing, presentations, data analysis). Independently seeks and utilizes instructions (e.g., online tutorials, user guides) to learn and use new features within common tools or unfamiliar tools for specific tasks (e.g., using data analysis features in Excel, creating accessible documents). Selects the most suitable tool for the job, considering both complexity and features. Manages software updates and confidently use accessibility features (e.g., text-to-speech, font size adjustments).	Can complete complex projects requiring advanced features and specialized software. Identifies and uses advanced features of digital tools to improve efficiency and security (e.g., data encryption in spreadsheets, using formulas in spreadsheets, creating templates in word processing). Selects and combines advanced tools to achieve complex goals (e.g., using automation tools to streamline workflows). Can troubleshoot problems, manage updates, recommend new tools to others, and implement advanced accessibility features.	Can use advanced features of common tools and innovate solutions using digital tools, and train others on their usage. Integrates various digital tools to streamline complex tasks (e.g., using automation tools, data visualization tools). Stays updated on emerging technologies and can recommend accessible tools for diverse needs.

Digital: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
3. Use digital information	Can navigate basic website layouts (identifying menus, navigation bars, search functions) but may have difficulty with unfamiliar layouts. Can perform basic searches with clear guidance (e.g., using the search bar on a familiar website). Needs help distinguishing credible from non-credible sources. Stores information in readily accessible locations (e.g., downloads directly to desktop).	Can navigate more complex websites and use basic elements like menus and search bars to find information. Can use search engines (e.g., Google) with simple keywords and basic search operators (e.g., keywords, quotation marks) to find information. Identifies basic indicators of credibility (e.g., website source, .edu vs .gov, author information). Can organize downloaded files in simple folder structures (e.g., creating folders for "Pictures" or "Documents").	Independently navigates complex websites and digital documents using advanced features (e.g., filters, search operators, keyboard shortcuts, bookmarks) to find specific information. Crafts effective search queries and can use tools like operators (e.g., AND, OR, NOT) to pinpoint exactly what they need. Evaluates sources based on credibility indicators like authorship, publication date, and website reputation. Creates a logical file structure using folders, subfolders, and naming conventions for downloaded files.	Can navigate complex websites, adapt to new formats and platforms quickly (e.g., navigating interactive content, using online databases), and troubleshoot navigation issues using online resources. Constructs complex search queries using advanced search operators and filters to find highly relevant information. Critically analyzes the accuracy, completeness, and biases of digital information, identifying potential misinformation or disinformation (e.g., verifying sources through citations and cross-referencing). Develops and implements efficient information organization systems for complex projects.	Expertly navigates any digital content, including complex websites, databases, and specialized software. Conducts highly targeted and efficient searches using advanced search techniques to find the most relevant and reliable information or designs customized digital tools for information gathering and analysis (e.g., web scraping tools). Critically analyzes information for credibility, potential biases, misinformation (e.g., AI-generated content), and information gaps. Designs and implements sophisticated information management systems for large-scale projects (e.g., mind mapping software, knowledge management platforms).
4. Use online tools and platforms	Can participate in basic online communication using familiar platforms (e.g., sending and receiving emails, video chatting with familiar contacts), and may be able to navigate unfamiliar platforms (e.g., unfamiliar social media platforms) with assistance.	Can effectively use a range of online communication tools for different purposes (e.g., using video conferencing platforms for meetings, using instant messaging for quick communication). Navigates more complex websites (e.g., social media platforms), using features like groups and messaging functions. Can use unfamiliar tools and platforms with the support of tutorials or help guides.	Independently uses various online communication and social media platforms for diverse purposes (e.g., video conferencing, networking). Seeks and uses instructions (e.g., online tutorials) to learn new features on unfamiliar platforms and can troubleshoot problems with websites and forms (e.g., error messages, missing fields).	Can use a variety of platforms, from basic file sharing to complex project management software, using advanced features and combining tools as useful. Selects and uses the most appropriate online communication tools based on the context and audience. Leverages online information-sharing platforms to manage complex workflows and facilitate collaboration across teams. Troubleshoots basic issues and explores new functionalities independently.	Can use complex features of platforms and proactively explores or develops new functionalities as needed. Integrates online information-sharing platforms with other digital tools to streamline complex information management and collaboration processes, and champions new approaches or methods.
5. Apply safe and responsible practices online	Relies on default security settings and may not understand the importance of data protection and data storage best practices. Creates simple passwords and understand the importance of keeping them confidential, and can create strong passwords with guidance. May struggle with appropriate online etiquette and may not recognize signs of online stress or fatigue (e.g., needs reminders to takes break from digital devices).	Can create secure passwords and understand some online threats (e.g., can identify common phishing tactics, avoids clicking suspicious links) but needs help with more complex security situations. Are cautious about what information they share online (e.g., adjusts privacy settings on social media platforms). Uses respectful language online but may not be aware of all the rules of online etiquette. Starts to identify signs of online stress and may take simple steps to manage it (e.g., taking breaks).	Implements secure data storage practices (e.g., secure passwords, using cloud storage with encryption). Protects personal information and implement security measures against online threats (e.g., uses antivirus software, verifying website legitimacy before making payments). Practices healthy online etiquette amd recognizes signs of digital fatigue (e.g., eyestrain, difficulty concentrating), taking breaks as needed.	Implements advanced data security practices (e.g., two-factor authentication, firewalls) and makes informed choices about what information to share online. Stays informed about emerging online threats and implements advanced security measures. Promotes positive digital citizenship by advocating for respectful online interactions and prioritize healthy online habits to avoid digital stress.	Can protect themselves and others from online threats (e.g., configure and manage firewalls), protects sensitive data with advanced encryption methods, and stays informed about emerging online threats and implements appropriate safeguards. Can troubleshoot basic security issues and identify potential vulnerabilities in online systems. Contributes to online safety initiatives by raising awareness about cyber security best practices and encourages responsible online behaviors in others (e.g., create policies and digital literacy resources for organizations). Proactively manages digital well-being and sets healthy boundaries for online usage.
6. Update and upgrade digital skills	May not identify the need for new skills or the resources available to learn them. When learning, relies on structured learning resources with clear instructions (e.g., instructor-led courses, step-by-step tutorials).	Seeks assistance with basic digital skill development when encountering new tasks (e.g., requests online tutorials, workshops). May require support to find relevant learning resources or apply new skills.	Independently identifies areas where they need to learn, finds appropriate resources like online courses or tutorials, and starts using their new skills to solve problems. Adapts existing knowledge to learn and apply new functionalities within familiar tools and keeps up with digital developments. May need some help with complex learning platforms or learning complex skills.	Analyzes personal and professional needs to identify gaps in digital skillset and seeks out advanced learning opportunities using a variety of resources, (e.g., online courses, mentoring). Adapts existing knowledge and learning strategies to acquire advanced digital skills (e.g., using online forums, communities of practice) and can troubleshoot learning challenges and find alternative resources as needed. May begin to mentor others.	Demonstrates a self-directed approach to lifelong digital skill development. Proactively identifies emerging skills and trends and uses a variety of learning resources (e.g., online courses, conferences, industry publications) to stay at the forefront of digital skills. Strategically uses existing digital skills to explore and learn advanced digital skills, potentially from diverse resources (e.g., online communities, industry publications). Acts as a leader, developing learning materials, and sharing knowledge and best practices through workshops, presentations, and online communities.

Table 15 Digital: Overarching descriptors

Digital: Overarching Descriptors			
	Entry	**Intermediate**	**Advanced**
Overarching descriptor	Can complete digital tasks and participate in digital interactions using common tools. Can find and share digital information using simple methods. Can implement basic security measures on multiple devices. Can engage in digital learning when provided with learning resources.	Can handle advanced digital tasks and set-up complex digital interactions by choosing the most efficient and effective tools. Can evaluate digital information from diverse sources for credibility before using or sharing. Can implement advanced security measures across different platforms. Can initiate digital learning and choose learning resources for self.	Can manage intricate digital tasks and interactions by integrating or creating tools. Can conduct multi-step searchers to critically evaluate digital information for credibility, and identify limitations of information used or shared. Can create protocols to promote long-term data security. Can stay updated on emerging technologies, support and lead others to take up emerging digital technology and adopt ethical and responsible digital practices.

PROBLEM SOLVING

Table 16 Problem Solving: Dimensions

Dimensions	Level 1	Level 2	Level 3	Level 4	Level 5
Problem Solving					
Complexity of problem definition	Problem is clearly defined by a few factors that are directly related (e.g., simple cause-and-effect).	Problem is defined by several factors that influence each other, requiring some analysis to identify the core issue.	Problem is defined by multiple factors, some of which are interconnected. New factors may emerge at later stages of defining the problem.	Problem is defined by a wide range of factors with initially uncertain and indirect dependencies that require further analysis (e.g., to understand trade-offs).	Problem is defined by numerous factors with highly intricate, poorly understood dependencies that require expert knowledge to define.
Complexity of information needed	Only a limited amount of information is needed to solve the problem. Information needed is well-defined and readily available.	More information is needed to solve the problem, but the amount is still manageable. Information needed is largely available. Some relevant information may need to be identified or inferred and checked for accuracy or credibility.	Significant amount of information is needed, requiring some organization and filtering. Relevant information needs to be searched for and extracted from multiple sources. Effort is needed to evaluate and choose the 'best' information based on accuracy, credibility, and recognition of potential biases.	Extensive amount of information is needed from potentially conflicting sources, requiring research and consolidation. Major effort is needed to synthesize, evaluate and choose the 'best' information based on accuracy and credibility. Biases and pre-conceptions are likely a factor and need to be managed.	Extensive amount of information is needed from a large number of conflicting sources, requiring research, consolidation, and clear vision and leadership for synthesis. Major effort is needed to reconcile, evaluate and choose the 'best' information based on accuracy and credibility. Biases and pre-conceptions needs to be interpreted to reconcile conflicting views.
Availability of procedures (e.g., decision tree)	Well-defined procedures exist, often in the form of algorithms or decision trees, that ensure a successful outcome if followed correctly. Requires basic reasoning, such as following instructions, memorizing and recalling facts.	Defined procedures exist, but may require interpretation or adaptation based on specific circumstances. Requires inferences and analogies, such as drawing connections between known information and applying it to other situations.	There is a set procedure to support development of a solution, but it allows significant room for discretion or interpretation. Requires causal reasoning, such as understanding cause-and-effect.	There may be several set procedures to address related issues, with need for extrapolation or adaptation to inspire the development of a solution Requires probabilistic reasoning, such as considering different possibilities, weighing likelihoods, conducting risk analysis.	There may be a few set procedures to address related issues solutions or decisions, but they provide limited guidance due to their small number or their limited comparability to the present issue; must develop solution with little guidance. Requires abstract reasoning, i.e., dealing with complex concepts and ideas not directly related to concrete experiences, such as navigating ethical dilemma, understanding scientific theories.
Solution generation and decision-making	One or very few steps required for solution. Limited number of potential solutions is readily apparent. Decision-making is straightforward and can be based on intuition. Mental shortcuts or rules of thumb.	A few well-defined steps needed for solution. A few potential solutions are available. Decision-making requires simple comparison based on one factor to choose the option that best meets a specific need.	A series of steps needed for solution. Numerous potential solutions are available. Decision-making involves establishing a minimum acceptable threshold based on one or two factors. Requires choosing the first option that meets or exceeds the threshold.	A long sequence of steps is needed for solution. Defined solutions exist, but require in-depth critical thinking to uncover. Decision-making requires considering and weighing several factors, some more important than others. Requires choosing the option that works best overall, even if it doesn't excel in every area.	A long-term and multi-stage process is needed to get a solution. Solutions may involve integrating knowledge from various domains, but established approaches exist. Decision-making requires optimization within certain constraints such as limited time and resources. Requires choosing the option that looks closest to optimal within these constraints.
Consequence of failure to solve the problem and/or make the right decision	Little or no consequence of error; decisions are easily reversed.	Errors have some minor consequence, (e.g., some loss of money or time), but can be reversed or rectified with some minor inconvenience or cost.	Errors have significant consequences, (e.g., significant loss of money or time), but can be rectified or reversed with some difficulty.	Errors have significant consequences that are not rectifiable or are only rectifiable or reversible at significant (e.g., legal, financial, health) cost to a group of people (e.g., students in a class).	Errors have direct consequences that are not reversible or rectifiable, or are only rectifiable at significant cost to a range of larger groups (e.g., an entire city).
Evaluation, learning, and reflection	No or minimal reflection required (e.g., only need to check if the solution works).	Some reflection required to identify simple takeaways or lessons learned.	Reflection required to extract lessons learned and effectiveness of process; may require actively seeking feedback to identify areas for improvement.	Ongoing reflection required to identify transferrable lessons to improve future solutions; may use evaluation frameworks to assess long-term consequences of the solution.	Critical reflection on the broad, long-term, and systemic impacts of solution required, including the use of evaluation frameworks and tools. May requires sharing expertise to empower others and contribute to long-term improvement of solutions.

Table 17 Problem Solving: Proficiency Statements

Problem Solving: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Identify the issue to be addressed	Identifies and articulates straightforward issues based on obvious signs. Can recognize basic elements of the problem and identify simple decision points in low-stakes situations.	Identifies routine issues and potential underlying problems or related issues. Recognizes the need for a decision and can distinguish between urgent and less important issues.	Identifies problems or issues, distinguishing symptoms from root causes. Prioritizes critical issues. Considers multiple perspectives and potential impacts to accurately define problems and decision points and avoid significant losses.	Identifies core issues in complex situations, anticipates future challenges, and identifies interconnected factors related to the problem. Can identify high-stakes issues with potential widespread consequences.	Accurately identifies and articulates complex, often hidden problems, and is able to anticipate potential future issues based on trends or patterns. Considers multiple perspectives to analyze systemic issues that require long-term, strategic solutions to prevent catastrophic consequences.
2. Gather information to help you address the issue	Collects easily accessible data to address simple issues. Relies on familiar sources and procedures, often using personal knowledge or asking colleagues.	Gathers information from various sources to address routine issues. Can typically recognize biases in information and understands the importance of verifying data.	Collects information from multiple sources to identify the context and potential solutions for moderately complex problems. Evaluates information for accuracy and relevance, and begins to manage biases and actively seek diverse perspectives.	Systematically gathers and analyzes information from diverse sources to address complex problems. Identifies potential knowledge gaps, consults experts, critically evaluates data for accuracy and bias, and ultimately identifies patterns and trends to address complex issues.	Conducts thorough research on complex issues, systematically gathering information from diverse sources. Analyzes data in-depth, considering multiple perspectives to form comprehensive understandings and identify potential solutions to systemic problems. Effectively synthesizes findings and addresses biases to inform decision-making.
3. Analyze the issue	Recognizes basic elements of simple problems and can identify obvious connections between pieces of information related to the problem.	Identifies the main components of problems. Breaks down simple issues into their core components, identifying connections and recognizing some patterns.	Breaks down complex issues into smaller parts, considering multiple perspectives to understand potential causes and effects, patterns, and relationships between information.	Conducts thorough analysis to understand complex problems by considering multiple viewpoints and potential outcomes. Identifies root causes, hidden factors, and potential consequences of solutions.	Expertly analyzes highly complex issues by synthesizing information from multiple sources. Identifies intricate relationships, potential solutions, and long-term consequences amidst uncertainty. Employs critical and systems thinking to develop innovative approaches considering various perspectives and stakeholders.
4. Develop multiple routes of action	Generates simple solutions to easy problems, thinking of the immediate consequences.	Generates a few potential solutions for simple issues. Evaluates potential solutions based on given criteria and considers short-term impacts.	Generates multiple practical solutions to complex problems. Considers the factors, constraints, and short- and long-term impacts of potential solutions.	Generates a variety of solutions to address highly complex problems. Evaluates the options based on multiple criteria including feasibility, potential consequences and risks, effectiveness, and short- and long-term impacts on multiple stakeholders. Ultimately selects the best solution based on various criteria.	Generates highly complex solutions for intricate or large-scale problems. Considers long-term impacts, unintended consequences, long-term sustainability, potential challenges, and ethical implications while creating comprehensive action plans with multiple contingencies.
5. Address the issue	Selects and implements a simple solution with minimal analysis, planning, or consideration of alternative solutions.	Chooses a suitable course of action, and implements the solution with some planning, monitoring progress and making adjustments as needed.	Makes informed decisions to select the most appropriate course of action. Implements the chosen solution with a structured plan, adapting as needed based on feedback.	Develops and implements strategic plans to solve complex problems, making informed decisions based on a thorough analysis of potential solutions, anticipating potential challenges. Makes necessary adjustments based on ongoing evaluation to achieve optimal outcomes.	Uses expert judgement to develop a comprehensive strategy to address highly complex problems, considering multiple factors and constraints. Implements a flexible plan and adapts to changing circumstances, using ongoing evaluation to make evidence-based improvements.
6. Evaluate the effectiveness of the solution or decision	Assesses the immediate impact of a simple solution, recognizing if the solution met its intended purpose using existing basic criteria and providing basic feedback.	Evaluates the effectiveness of a solution or decision. This includes assessing overall success using existing criteria, identifying key outcomes, and suggesting improvements.	Evaluates effectiveness of solution, considering multiple factors, long-term impacts, unintended consequences, and established goals. Identifies strengths, weaknesses, and areas for improvement, ultimately learning from the process.	Evaluating a complex solution or process. This evaluation involves assessing outcomes against predefined standards, identifying factors contributing to success or failure, learning from experiences, and determining areas for improvement. Generates best practices or refinements to optimize future applications and inform decision-making.	Critically analyzes complex solutions or decisions, assessing their long-term impacts, evaluating the sustainability of the solution, identifying systemic issues, and providing recommendations for improvement. Gathers input from various stakeholders and using evaluation frameworks to guide the analysis. Synthesizes analysis to identify broader implications, insights, and best practices to share systemically.

Table 18 Problem Solving: Overarching Descriptions

	Entry	Intermediate	Advanced
Overarching descriptor	Can address well-defined problems with a few factors and readily available or easily inferred information. Can follow a set procedure or decision tree using some basic inferences to generate a few solutions and select the best option. Failure to address the issue has minor consequences. Can check if the solution works and identify simple takeaway lessons.	Can address problems with multiple factors that involves gathering and evaluating information (e.g., credibility, biases). Can follow a procedure or decision tree that requires casual reasoning and significant interpretation. Can generate multiple solutions and select the best option based on one or two factors. Failure to address the issue has significant consequences (e.g., loss of time, money). Can reflect and seek feedback to identify lessons learned and improve effectiveness.	Can address complex problems with unpredictable or intricate factors that involves synthesis and evaluation of extensive information from conflicting sources, and managing biases and pre-conceptions. Can extrapolate and apply procedures or decision trees that require probabilistic or abstract reasoning. Can generate solutions that are only uncovered after in-depth thinking and integration and select the best option given multiple factors and constraints. Failure to address the issue has major consequences that are not easily rectifiable (e.g., financial, health). Can use frameworks and tools to reflect on long-term or systemic impacts.

COMMUNICATION

As emphasized by our Expert Panel throughout this project, Communication includes speaking, listening, and non-verbal communication.

Table 19 Communication: Dimensions

Communication: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Non-verbal cues	Straightforward and directly observable, with little variation of meaning across cultures (e.g., basic emotional expressions)	Directly observable, but with some variation of meaning across cultures (e.g., eye contact, distance, posture, gestures)	Interpreting these cues requires considering the spoken words and the overall situation (e.g., meaning of para-linguistics such as rhythm and tone vary with words, looking away can signal either disinterest or concentration).	Combination of cues may be ambiguous or contradictory (e.g., smiling but tense shoulders, nervous laughter).	Subtle, fleeting, and difficult to discern (e.g., tightening of jaw could indicate anger or stress, or could be a physical habit unrelated to the conversation).
Clarity of message received	Clearly stated with supporting contextual or non-verbal cues. Little to no distractors.	Stated with only some supporting contextual or non-verbal cues. Minor distractors that can be usually ignored (e.g., background noise, filler words, briefly off-topic).	May be ambiguous and needs to be clarified through context, non-verbal, or other cues. May require some analysis and integration. Moderate distractors that require more effort to ignore or address (e.g., interruptions, off-topic tangents).	Not explicitly stated and needs to be inferred through context, non-verbal, or other cues. Requires analysis and synthesis. Significant distractors (e.g., unnecessary jargon, disorganized or inconsistent information).	May conflict with what is stated or suggested by context, non-verbal, or other cues. Requires analysis, synthesis, and evaluation. Substantial distractors (e.g., conflicting or incoherent information).
Complexity of the information conveyed	Narrow range of subject matter dealing with facts, familiar topics, and one main issue. Limited need for supporting content. Language is factual, literal, and concrete, rarely if ever abstract. Narrow range of content and context-specific or technical vocabulary.	Subject matter deals with facts but can sometimes include emotions and opinions, familiar topics, and one or a few issues. May include some examples or explanations. Language is mainly factual or concrete, and sometimes abstract. Moderate range of general and context-specific or technical vocabulary and common idioms.	Subject matter deals with facts, emotions, and opinions related to familiar and unfamiliar topics on a variety of issues. Includes supporting evidence when relevant. Language can be abstract and conceptual. Wide range of general and context-specific or technical vocabulary and idioms that can be interpreted based on context.	Subject matter deals with facts, emotions, opinions, and values related to a range of professional, theoretical, and social issues. Supporting logical reasoning and nuanced arguments are shared. Language can be abstract, conceptual, and technical. Extensive range of general and technical vocabulary and idioms that rely less on context.	Subject matter deals with facts, emotions, values, and controversies on a range of interdisciplinary topics related to professional, theoretical, and social issues. Supporting complex analysis and persuasive arguments are shared. Language can be highly abstract, conceptual, and technical. Extensive range of general and technical vocabulary and idioms, independent of context.
Predictability, format and setting (i.e., routine or non-routine)	Predictable interactions with a well-established format and routine (e.g., answering a phone, simple greetings)	Mostly predictable interactions using familiar formats, with some room for variation. Routines often exist, but require some adaptation based on the context (e.g., dealing with minor customer complaints, participating in meetings with a known agenda).	Interactions are routine, but the content of the communication may be unpredictable and require the use a range of formats and styles (e.g., coordinating routine work with others but needing to address unexpected challenges, sharing complex information during a routine presentation and needing to adapt based on audience questions).	Unpredictable and non-routine interactions using a wide range of formats and styles that may need to be adapted to meet different levels of formality and communication needs (e.g., presenting to an unknown audience, leading emergency meetings).	Unpredictable, non-routine, and complex interactions requiring on-the-spot adaptation with no background information. Requires a wide range of formats and styles that need to be adapted or integrated to meet communication needs (e.g., facilitating complex discussion on a sensitive topic, providing impromptu customer service for a frustrated client with a unique complaint).
Participants and roles	One-on-one interactions where roles are clearly defined and the other person is cooperative and familiar.	Interactions with one or two people with clearly defined roles. Individuals are usually cooperative and familiar but may be diverse.	Small group interactions with individuals with multiple roles, including some that are undefined. Group includes familiar and unfamiliar diverse individuals, and one or two who may be uncooperative.	Small or medium-sized group interactions with multiple undefined roles, with some conflicting. Group includes unfamiliar diverse individuals, and several who may be challenging.	Large group interactions with multiple, conflicting, and undefined roles. Group includes unfamiliar diverse individuals, with many who may be hostile.
Length and stakes of the exchange	Brief exchange with limited back-and-forth (e.g., generally 10 minutes or less). No stakes, to send and receive information only, requires no planning (e.g., asking for directions, confirming an appointment).	Brief to medium exchange with more back-and-forth (e.g., generally up to 30 minutes). Low stakes, to explain, instruct, and share opinions. Some preparation may be helpful (e.g., giving instructions to a colleague).	Medium in duration, with periods of listening or speaking back-and-forth (e.g., generally 30 minutes to less than an hour). Moderate stakes, to present and discuss. Planning and preparation are recommended (e.g., delivering a departmental update meeting).	Extended duration, with extended back-and-forth (e.g., generally an hour or so). Potentially high stakes, to negotiate and resolve conflicts. Thorough planning and preparation are crucial (e.g., negotiating a contract with client, conducting a performance review with an employee).	Long, with in-depth discussion and back-and-forth (e.g., generally more than an hour). Very high stakes, to mediate conflicts and discuss complex issues. Extensive planning and preparation are essential (e.g., mediating a conflict between management and union members).

Communication: Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Failure of communication intent	Causes minor inefficiency, temporary confusion, or slight embarrassment that can be easily resolved.	Causes some inefficiency, confusion, or embarrassment that can be clarified or resolved.	Causes inefficiency, loss of money or time, confusion, embarrassment, or conflict that can be resolved with some effort.	Causes failure to obtain a major objective, loss of money or time, danger or hazard; and discreditation or conflict that can be resolved with effort.	Causes failure to obtain a major objective, loss of money or time, danger or hazard; and discreditation or conflict that cannot be resolved, or only at significant cost.

Table 20 Communication: Proficiency Statements

Communication: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Listen with intention	Pays attention to basic or factual information in familiar contexts, especially one-on-one. Focuses mainly on words. Body language may be distracting or disinterested. Asks occasional clarifying questions, but may have difficulty summarizing key points.	Pays attention to familiar topics in familiar formats, considering basic non-verbal cues (e.g., eye contact), but may miss subtleties or cultural variation. Uses basic body language (e.g., nods) to show attentiveness but can be distracted. Asks clarifying questions and summarizes key points with prompting. Starts to recognize some personal biases.	Listens attentively to familiar and unfamiliar topics, including emotions and opinions, in diverse group settings. Considers both verbal and non-verbal cues, including cultural variations. Uses body language to show engagement and support (e.g., leaning in). Asks thoughtful questions to explore different perspectives and independently summarizes and paraphrases key points. Recognizes and attempts to manage personal biases to avoid misinterpretations.	Listens strategically to complex topics with diverse viewpoints, adapting to different situations and communication styles. Interprets verbal and non-verbal cues even when they are subtle (e.g., para-linguistic) or contradictory (e.g., nervous laughter). Uses nuanced body language to convey understanding and appropriate emotions. Asks insightful questions to challenge assumptions and encourage elaboration. Effectively summarizes key points and identifies underlying messages. Manages personal and speaker biases for accurate interpretation.	Listens critically to interdisciplinary topics with complex arguments and controversies, even in large diverse groups with potential hostility. Discerns very subtle verbal and nonverbal cues (e.g., micro-expressions) and considers cultural and individual variation. Uses nuanced body language to manage conversations, respond to unspoken cues, and build trust. Asks strategic questions to clarify inconsistencies, complex messages, and hidden agendas. Provides clear and concise summaries of complex information and manages personal and speaker bias for objective understanding.
2. Listen to understand	Focuses on literal or surface-level meaning, sometimes missing speaker's intent and context of the message. Accepts information without questioning or analyzing. Prepares simple responses based on limited understanding.	Begins to understand speaker's intent and consider the context (e.g., formality, purpose), but may miss cues about underlying intentions. Relies on the credibility of the speaker and may use basic fact-checking. Listens to arguments and positions, but may struggle to analyze them, especially unexpected or conflicting viewpoints. Responds literally based on surface-level understanding.	Understands speaker's purpose, key points, and some underlying assumptions, including during small group discussions. Recognizes the influence of context on the message. Assesses information for reliability and validity (e.g., source, evidence). Analyzes arguments and positions, identifying strengths and weaknesses, but often from a single perspective. Prepares responses that addresses or builds on the speaker's points.	Understands speaker's purpose, complex arguments, and underlying messages or hidden agendas on diverse topics within medium-sized group discussions. Actively considers cultural and situational contexts to interpret meaning. Critically assesses information for accuracy, relevance, and potential bias. Analyzes diverse viewpoints, finds common ground, and bridges communication gaps. Prepares insightful responses that address explicit and underlying messages, challenge assumptions, suggest alternate interpretations, or build consensus.	Understands speaker's nuanced purpose, complex arguments, and underlying messages on interdisciplinary topics within large diverse group discussions. Demonstrates deep understanding of cultural nuances on communication styles and interpretation. Critically evaluates information for accuracy, relevance, and potential biases. Breaks down complex arguments, identifies logical fallacies, and reconciles complex and contradictory perspectives. Crafts strategic responses that address underlying motivations or core issues, propose innovative solutions, and bridge dividing perspectives.
3. Speak with clarity	Speaks using basic grammar and vocabulary, relying on simple sentence structures, and speaks in monotone voice. May use gestures to help convey meaning, although non-verbal cues may sometimes contradict message. Is mostly understood despite grammatical errors or pronunciation difficulties.	Speaks using mostly clear grammar and pronunciation with complete sentences and wider range of vocabulary. Starts to vary cadence and rhythm for emphasis. Makes occasional errors but can usually self-correct.	Speaks using complex sentences and varied vocabulary to communicate clearly in different situation with few errors. Uses appropriate cadence, rhythm, and pace to convey meaning and engage listener.	Speaks clearly and fluently using sophisticated grammar and vocabulary to convey complex ideas in complex situations. Adjusts cadence, rhythm, volume, and pace to emphasize key points and engage audience.	Speaks with clarity and precision using nuanced grammar and vocabulary to articulate complex ideas across interdisciplinary contexts. Leverages pauses, volume, pitch, and emphasis strategically and persuasively to convey nuanced meaning and impact audience.

Communication: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
4. Speak with purpose	Communicates basic information in familiar contexts although the purpose is not always clear. Is still learning to define communication goals and tailor communication accordingly. Uses few supporting details or explanations that may be generic or irrelevant. May use body language and tone that contradicts the intended message.	Communicates with clear purpose in familiar contexts and attempts to adapt content and style. Uses some examples and content to support message, but may be irrelevant or weak arguments. Organizes communication with some structure, but can be sometimes hard for listener to follow and understand purpose.	Speaks with a clear and defined purpose in a variety of contexts and tailors the message accordingly. Uses relevant examples, facts, and stories to engage the audience and support the message. Organizes communication with logical structure and clearly articulates purpose both verbally and non-verbally.	Strategically tailors content, structure, and language to achieve nuanced goals with specific audiences in diverse contexts. Uses compelling evidence, arguments, and narratives to achieve desired outcomes. Structures communication in clear, logical, and persuasive way, seamlessly integrating both verbal and non-verbal cues to influence audience.	Crafts highly impactful and sophisticated messages with tailored content, structure, and persuasive strategies to achieve complex communication goals across diverse or interdisciplinary contexts. Presents complex arguments with flawless logic, evidence and emotional appeal, and other advanced techniques such as storytelling and data visualization to achieve desired outcomes. Creates a narrative structure that engages audience and anticipates and addresses questions and objections.
5. Adapt to your audience and contexts	Uses a generic communication style (e.g., language, tone, gestures) with limited awareness of different audience and context needs. Focuses on own needs and perspective and may not consider how others can be offended or confused.	Starts to consider basic audience needs and context in familiar situations with one or two people and makes some limited adjustments to content and style (e.g., based on age, culture, formality). Begins to consider potential risks such as unintentionally offending someone.	Actively considers audience needs, preferences, and styles, and different communication contexts. Adapts content, tone, language, and non-verbal cues accordingly to enhance engagement with audience. Recognizes potential risks associated with sensitivities (e.g., individual, cultural) and confidentiality and takes basic steps to manage them (e.g., avoid certain topics).	Tailors communication strategically to diverse audiences and complex contexts, including unpredictable situations. Demonstrates awareness of cultural nuances, communication styles, and accessibility needs. Carefully selects content, tone, language, and non-verbal cues to engage audience and maximize impact. Anticipates potential risks and consequences (e.g., legal, ethical, reputational), and adjusts accordingly.	Adapts effectively to highly diverse audiences across interdisciplinary, unpredictable, and complex contexts, adjusting in the moment or with limited information. Demonstrates exceptional cultural sensitivity and bridges cultural divides. Uses advanced communication techniques and adapts content, tone, language, and non-verbal cues to impact audience and navigate complex situations. Anticipates and manages complex risks with foresight and diplomacy, ensuring positive outcomes.
6. Adapt to other people's different communication modes and tools	Uses primarily a single communication mode (e.g., face-to-face). May struggle with understanding and adapting content and language to other communication modes and tools (e.g., phone, video), relying on generic messages.	Starts to explore different communication modes and tools, but may lack understanding of their strengths and weaknesses. Begins to adapt content and structure to chosen tool with minor adjustments but may make occasional mismatches between tools and tasks.	Actively selects communication modes and tools considering their strengths and weaknesses and appropriateness for the situation, audience, and message itself. Adapts content, structure, and approach accordingly, considering the lack of non-verbal cues in certain modes. Identifies and avoids common mistakes with certain tools.	Effectively uses a variety of communication modes and tools with in-depth knowledge of their functionalities, strengths and weaknesses, and influence on the message. Strategically selects modes or tools to maximize impact and desired outcomes on audience in a given context. Optimizes content, structure, and approach for each mode or tool and anticipates and addresses challenges with specific tools (e.g., accessibility).	Effectively uses and explores advanced and emerging communication modes and tools, leveraging innovative features and using tools to navigate complex communication situations. Tailors content, structure, and approach in highly customized and creative ways to achieve desired goals and create a unified and compelling message for audiences, even across different modes and tools. Identifies and mitigates potential risks associated with new tools and technologies.

Table 21 Communication: Overarching Descriptors

	Entry	**Intermediate**	**Advanced**
Overarching descriptor	Can communicate a narrow range of familiar topics (e.g., including facts, emotions, opinions) and use examples and explanations when needed. Can interact with one or two known individuals in small exchanges of information with some back and forth, where minor confusion or embarrassment can result when communication fails. Can use and understand directly observable non-verbal cues.	Can communicate a range of familiar and unfamiliar topics (e.g., including facts, emotions, opinions, issues) and use supporting evidence when relevant. Can interact with small groups of unfamiliar diverse and possibly uncooperative individuals in exchanges of information with moderate stakes, which can result in inefficiency, losses, or conflict when communication fails. Can use and understand subtle combinations of non-verbal cues.	Can communicate on a range of professional, theoretical, and social topics (e.g., including values, controversies, interdisciplinary issues) and use supporting analysis and persuasive arguments. Can interact in large groups with unfamiliar diverse and possibly hostile individuals in extended exchanges of information with high stakes, which can result in danger, loss of resources, and significant conflict when communication fails. Can use and understand highly contextualized non-verbal cues specific to group, culture, etc.

COLLABORATION

Table 22 Collaboration: Dimensions

Dimensions	Level 1	Level 2	Level 3	Level 4	Level 5
Collaboration					
Group dynamics	Small group where everybody knows one another and has worked respectfully together before (e.g., a book club where members already know each other).	Small group where most know one another and have worked respectfully before (e.g., a community garden group with some new volunteers).	Medium-sized group where only some know one another. Minor disagreements might occur (e.g., a company-wide meeting to discuss a new company policy).	Large unfamiliar group. Disagreements might occur frequently (e.g., a national conference with representatives from various companies discussing industry standards).	Large unfamiliar group. Significant conflicts occur regularly (e.g., a labor negotiation between a company and a union with a history of conflict).
Equity, diversity, and inclusion	Mostly homogenous group with few differences in viewpoints, backgrounds, abilities, or styles. Requires awareness of differences (e.g., a team of engineers in a small town all with similar educational backgrounds and work experience collaborates on a technical project).	Some different viewpoints, backgrounds, abilities, or styles. Requires basic understanding of differences (e.g., a marketing team has members from different age groups with varying levels of experience in social media marketing).	Many different viewpoints, backgrounds, abilities, or styles. Requires consideration of and adjustments to these differences and following existing equity and inclusion policies and practices (e.g., a tech company encourages team members from underrepresented backgrounds to take on leadership roles in projects).	Diverse viewpoints, backgrounds, abilities, or styles. Requires encouragement of inclusive and equitable practices among others (e.g., a national healthcare task force is formed with doctors, nurses, patients, and representatives from Indigenous communities to address healthcare disparities).	Diverse and directly conflicting viewpoints, backgrounds, abilities, or styles. Requires constant facilitation of respectful interactions among others to ensure equity and inclusion. May include developing new equity and inclusion policies and practices (e.g., a school board in a multicultural city faces protests from parents on the implementation of a new sex education curriculum).
Complexity of the coordination	Individual work with minimal or no coordination, only need report on task completion to others (e.g., one person completing a report and passing it along for another to develop an executive summary).	Shared work with one or two others that requires some basic coordination of tasks and timelines (e.g., two colleagues co-developing a presentation with clearly assigned sections).	Group work that requires coordination of inter-dependent tasks, timelines, and resources (e.g., a team of developers working on a software project).	Group work that requires complex coordination, including negotiation and prioritization (e.g., a student council planning a fundraising event).	Group work that requires strategic and evolving coordination based on long-term goals and changing circumstances (e.g., a team developing a new business initiative).
Rules and routines of the coordination	Minimal or no rules or routines are required to coordinate work (e.g., roommates take turns taking out the trash and recycling).	Rules and routines are well-established (e.g., a team in a manufacturing plant follows a well-defined assembly line process).	Rules and routines are not fully established, but the common goals are clear and there are previous coordination routines to replicate (e.g., a team that has successfully collaborated on a project in the past works together again with some new team members).	Rules and routines are not established but can be easily defined based on clear common goals (e.g., a cross-functional team from different departments comes together for a broad but well-defined project).	Rules and routines need to be negotiated and common goals need to be defined (e.g., a blended family with children from previous relationships is trying to establish new household rules and routines).
Roles and responsibilities	Requires being responsible only for own behaviour in the interaction (e.g., attending meetings and following meeting agendas).	Requires being responsible for own and other's behaviour in interaction with another individual (e.g., coordinating tasks with a new colleague).	Requires the responsibility to maintain effective interactions among multiple individuals (e.g., facilitating a small team meeting).	Requires the responsibility to manage interactions and integrate tasks on a team (e.g., organizing a volunteer event for a community group).	Requires the responsibility to lead the direction of the team, and coach, motivate, and inspire team members (e.g., setting the vision and goals for a large company).
Evaluation and feedback	Limited evaluation of collaboration required. May include providing feedback on own behaviours (e.g., a new employee shadows a more experienced colleague and provides basic feedback on their own understanding of the collaboration process).	Some basic evaluation of collaboration required. Includes receiving and providing feedback on behaviours of self and others (e.g., a study group uses a rubric to assess each other's contributions to a group presentation, focusing on participation and clarity).	Evaluation on collaboration required. Includes receiving and providing feedback on self, others, and the group as a whole. May include the use of specific tools (e.g., questionnaires, competency frameworks) (e.g., a group of volunteers working on a community project uses a questionnaire to gather feedback from team members).	Regular evaluation of collaboration required. Includes facilitating feedback among team members and from beyond the team (e.g., clients and partners) (e.g., a sports team or club regularly uses post-game evaluations with coaches, players, and volunteers).	Continuous evaluation of collaboration required. Includes creating an open and safe environment for ongoing reflection, feedback, and learning for everybody (e.g., a company implements a system for ongoing feedback on teamwork and collaboration using anonymous surveys, team discussions, and team building exercises).

Table 23 Collaboration: Proficiency Statements

Collaboration: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Work Well with Others	Respects and shows courtesy to others, follows instructions, and completes assigned tasks. Conveys information to show accountability to another person, and occasionally offers encouraging words to others. Has limited awareness of own strengths and weaknesses.	Builds trust and rapport by following through on commitments and meeting expectations. Offers support and encouragement to others. Identifies basic personal and team strengths and weaknesses, and areas for improvement.	Builds trust and rapport with others including unfamiliar and diverse individuals by consistently being reliable and supporting others through positive words and actions. Actively seeks feedback and leverages team strengths and addresses weaknesses (e.g., pairs team members with complementary strengths).	Builds trust and rapport in diverse teams with complex dynamics (e.g., through empathy, listening, conflict resolution). Leads team by establishing routines and adapting collaboration style and behaviours to foster a safe and inclusive environment, while maintaining professionalism. Creates opportunities for team reflection (e.g., strengths and weaknesses) and leverages understanding of strengths and weaknesses to navigate group dynamics.	Inspires trust and builds team environment through leadership, coaching and mentorship. Leads team by adapting strategies, structures, and routines to complex and evolving circumstances to ensure continued collective action towards shared goals. Champions diversity and inclusion, creating safe spaces for diverse perspectives and leveraging them to strengthen teams. Facilitates continuous learning from team strengths and weaknesses, implementing best practices to improve group dynamics and team performance.
2. Value Diversity & Inclusivity	Recognizes importance of diversity, but lacks awareness and understanding of different cultures, backgrounds, etc., how it can influence working with others. Understands that different viewpoints exist, and tries to avoid judgements, but may unintentionally exclude others due to lack of full awareness.	Recognizes and understands diversity on a small team. Makes occasional attempts to consider and adapt to these differences but may struggle with consistency. Treats others with respect regardless of differences but may hold underlying biases and require prompts to engage with diverse viewpoints. Begins to be aware of exclusionary behaviours and tries to avoid them.	Values diversity and seeks to learn about and understand different backgrounds and viewpoints. Listens actively and respectfully to different viewpoints even when they differ from own. Contributes to inclusive environments by incorporating and responding to differences in teamwork (e.g., solicit contributions from diverse team members, support diverse thinking and brainstorming).	Demonstrates deep understanding of how diversity can influence collaboration and actively seeks differences as a strength. Promotes an environment where everyone feels valued, respected, and heard, and actively challenges biases and assumptions (e.g., gender bias on construction jobsites). Creates space for diverse team members to collaborate, (e.g., share ideas without fear of judgment, adapt interaction styles to ensure inclusive participation, acknowledge their own bias and knowledge gaps).	Serves as role model who champions diversity and inclusivity. Leads diverse teams by utilizing unique strengths of all members. Advocates for long-term approaches to break down systemic barriers and facilitate participation of diverse groups. Strives toward inclusivity at the organizational or institutional level (e.g., recommend inclusive workplace practices and recruitment and hiring policies).
3. Manage Difficult Interactions	Excels at basic interactions like reporting on completed tasks where conflicts can be more easily avoided. Withdraws from difficult interactions. Struggles with more complex interactions and discussions especially with differing opinions, and relies on others to identify and navigate interpersonal challenges.	Participates in difficult interactions and discussions under guidance, but may not actively engage with other viewpoints. Can identify some interpersonal barriers but lacks strategies to address them. Manages conflicts using simple strategies (e.g., asking for clarifications, basic compromise), but may overlook deeper issues or need support in complex situations.	Approaches difficult interactions and discussions using established collaboration tools (e.g., consider different perspectives, seek to understand the root cause of conflicts). Recognizes and addresses interpersonal barriers. Independently resolves some difficulties and contributes to resolving others.	Facilitates difficult interactions or discussions using conflict resolution tools and ensuring all voices are heard. Anticipates potential interpersonal barriers and takes steps to prevent them (e.g., negotiate to reach shared understanding, emphasize common ground). Independently navigates challenging interactions and sometimes guides others.	Mentors and coaches others on conflict resolution and how to navigate difficult interactions. Facilitates and moderates challenging and sensitive interactions.
4. Facilitate Collaborative Environment	Fulfills their own role but lacks understanding of how it contributes to team success. May not be aware of roles of others. Requires clear guidance to understand their place in the team and how to support others.	Understands own role and the roles of immediate team members. Provides basic support (e.g., sharing resources, offering help with tasks), but need prompts to address different team members' needs.	Understands their own role and respects the roles of others. Identifies and addresses team members' needs, providing tailored support for individuals to ensure all can contribute to their best abilities.	Clarifies roles and responsibilities with team members, assigning tasks based on individual strengths and weaknesses. Coaches, mentors, and empowers others to reach their full potential and enhance team dynamics, valuing their contributions and providing constructive feedback.	Lead teams by providing a clear strategic vision and empowers others to take proactive approaches toward shared goals, even with evolving roles and responsibilities. Provides expert guidance, motivation, and mentorship so that team members can overcome challenges and enhance the collaborative process. Coaches teams to cultivate collaborative routines and cultures that align with long-term shared goals.

Collaboration: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
5. Achieve a common goal with others	Completes assigned part of the teamwork, but rarely seeks input, assistance, or opportunities for others to contribute. Relies on directions of others to ensure risks and resources are managed appropriately.	Completes tasks, taking ownership of their part of the teamwork, seeks input and consults with others when needed. Acknowledges others' contributions. With guidance, begins to consider risks and limited resources in teamwork.	Seeks opportunities to go beyond assigned tasks (e.g., take on more responsibilities) and consults with others in anticipation of needs to help team achieve shared goals. Encourages and facilitates diverse contributions from all team members. Identifies and mitigates risks to the collaborative process while managing resources effectively (e.g., understand time limit).	Takes on challenging tasks in the team and manages coordination and integration of others' tasks to achieve common goal. Co-defines goals with the team and facilitates shared decision-making throughout the collaboration process. Anticipates and mitigates risks to the collaborative process and strategically optimizes resources (e.g., find synergies across tasks of different team members).	Unites and motivates team with their leadership. Inspires collective action towards shared goals. Makes risk mitigation plans considering far-reaching implications (e.g., on the organization, region, or society). Integrates system thinking into resource allocation (e.g., manage resources based on long-term strategic visions).
6. Reflect and improve on how well the team works together	Attends team reflection activities but may not actively participate. Occasionally identifies a basic issue or weakness but lacks experience to suggest improvements. May struggle to accept or learn from feedback, no understanding how own behaviour affects the team.	Participates in team reflection activities by offering suggestions for improvement, mainly limited to own tasks and contribution. Accepts feedback and attempts to understand and implement it. Struggles to comment on other team members, or on the team dynamics in general.	Reflects on team successes and challenges, suggesting improvements that consider diverse perspectives and needs of all team members. Seeks and learns from feedback to improve both individual and team performance.	Analyzes team performance with a long-term view, systematically collecting feedback, encouraging open discussions on team performance, and creating safe spaces for honest evaluation. Seeks diverse viewpoints on how the team works, make plans to collectively address biases and improve inclusive team dynamics. Fosters a growth mindset among team members through constructive feedback exchanges (e.g., all team members are empowered to build on strengths to address areas for improvement).	Champions a culture of learning and development by providing ongoing feedback, coaching, and mentoring opportunities. Guides the team in analyzing own and team performance, identifying areas for improvement, and setting future and long-term goals. Uses an evidence-based approach (e.g., collect feedback survey from team members) and analyzes performance data to improve teamwork. Leads continuous learning initiatives by organizing and facilitating workshops and best-practice sharing events to foster an inclusive and collaborative team environment (e.g., advocate for workplace training to enhance inclusivity).

Table 24 Collaboration: Overarching descriptors

Collaboration: Overarching Descriptors			
	Entry	**Intermediate**	**Advanced**
Overarching descriptors	Can interact in small groups with some individual differences, where most or all know one another. Can understand and make minor adjustments to differences. Can follow well-established rules and routines for basic coordination of tasks. Can interact effectively with other individuals and receive and provide basic feedback on self and others.	Can interact in medium-sized groups with many individual differences, where only some know one another. Can consider and adapt to others in inclusive and equitable ways. Can use common goals to adapt previous rules and routines to coordinate group work. Can maintain effective interactions within a group and receive and provide feedback on self, others, and the team.	Can interact in large unfamiliar groups with diverse individual differences and conflicts. Can facilitate or lead the use of inclusive and equitable practices among others. Can define common goals to negotiate and manage rules and routines to strategically coordinate complex group work. Can lead, coach, and motivate a team, creating space for ongoing feedback and learning together.

ADAPTABILITY

Table 25 Adaptability: Dimensions

Adaptability Dimensions					
Dimensions	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Magnitude, pace, and predictability of change	Limited variations (e.g., similar, repetitive tasks) Disruptions rarely occur. When change happens, it is gradual, with plenty of time to adjust	Wider range of variations but predictable (e.g., some differences in tasks but the differences are known ahead of time) Disruptions sometimes occur. Change develops over a reasonable timeframe, allowing for some preparation	Wider range of less predictable variations (e.g., a mix of repetitive and non-repetitive tasks, and the non-repetitive tasks may not always be known ahead of time) Disruptions often occur. Change unfolds at a quick pace, requiring a quick response	Variations are not predictable but are within a structure or routine (e.g., unknown differences in schedule, but are based on a familiar routine) Disruptions frequently occur. There is little to no time to prepare	Significant variation, no set structure or routine, different schedule or plan each day (e.g., new schedule every day, may need last-minute planning) Disruptions always occur. There is limited time available to adapt to change
Degree of impasse (e.g., roadblocks, bottlenecks)	Changes are unlikely to result in an impasse. Can apply original plans and goals with minimal adjustments	Change can be easily accommodated, no new plan is required (e.g., some minor, short interruptions, but can easily resume original tasks)	Changes introduce complications that require substantial revisions of original plans (e.g., more significant interruptions, need some re-sequencing of tasks or re-scheduling of people or things)	Change can fundamentally alter the context of the task. New goals and plans may be required.	Change can expose limitations and weaknesses of the current approach. Requires new approaches and therefore new goals and plans.
Autonomy in planning and goal-setting	The plan is provided by others. Prioritization might not be needed (e.g., simply work on tasks in chronological order). Goals are set by others.	Some scope to plan, order, and prioritize the tasks within the constraints of a framework determined by others, e.g., a supervisor, a more experienced colleague Goals are set by others with room for input from the individual.	Priorities and task sequence are set by the individual based on previous experience, specialized knowledge, occupational practice, and/or professional standards, but subject to confirmation or approval by others, e.g., supervisors Goals are set by the individual under general guidance from others.	The individual has authority to set priorities and task sequence for themselves The individual has authority to set goals for themselves	The individual has authority to set priorities and task sequence for themselves and others The individual has authority to set goals for themselves and others
Number of parallel goals	A single, well-defined goal	Two to three sequential goals	Two to three concurrent or parallel goals	Multiple parallel goals with potentially conflicting time demands	Extensive number of dynamic, evolving goals, with conflicting time demands
Impact of failure to achieve goals	No direct impact on subsequent tasks, but personal motivation may be affected	Limited, may affect own subsequent tasks	More extensive, can affect others' tasks	Broad, often affects others' tasks, related to an important but not critical part of the work	Significant, affects tasks of several others, related to a major part of the work
Sources of time demand	Single source (e.g., report to one supervisor)	Two to three sources, rarely conflicting (e.g., need to meet assignment deadlines of two to three classes per semester)	Multiple sources, but with predictable sequencing and rarely conflicting time demands (e.g., handle coursework and afterschool activities)	Multiple sources, potentially with competing or conflicting demands for time; however, there are established criteria or procedures for deciding between tasks (e.g., juggle a part-time job with full-time study, but the hours of the part-time job can be negotiated).	Multiple sources, potentially with competing or conflicting demands for time. The individual must use their own judgment to decide between tasks (e.g., complete multiple projects with similar deadlines for different clients)
Continuous learning	Occasional need for skills upgrading, with direct application to task requirements. Learning goals, methods, and sources are set and provided by others.	Regular need for skills upgrading, requiring some inference to link and apply training to task requirements. Learning environment is more flexible; learners can co-create goals and help choose learning methods.	Regular need for skills upgrading, requiring use of existing skills and experience to engage in and link learning activities to task requirements. Learners set own goals and select a variety of resources under broad general guidance.	Frequent need for skills upgrading, requiring learners to build on extensive prior skills and knowledge bases. Learners identify and establish relevance for a wide range of potential resources and methods, and tailor activities to align with task requirements.	Frequent need for skills upgrading for self and others, requiring knowledge development and sharing within a dynamic learning network. May require fluid goal setting for self and others, and departure from established sources and methods in the face of frequent disruptions.
Magnitude, pace, and predictability of change	Limited variations (e.g., similar, repetitive tasks) Disruptions rarely occur. When change happens, it is gradual, with plenty of time to adjust	Wider range of variations but predictable (e.g., some differences in tasks but the differences are known ahead of time) Disruptions sometimes occur. Change develops over a reasonable timeframe, allowing for some preparation	Wider range of less predictable variations (e.g., a mix of repetitive and non-repetitive tasks, and the non-repetitive tasks may not always be known ahead of time) Disruptions often occur. Change unfolds at a quick pace, requiring a quick response	Variations are not predictable but are within a structure or routine (e.g., unknown differences in schedule, but are based on a familiar routine) Disruptions frequently occur. There is little to no time to prepare	Significant variation, no set structure or routine, different schedule or plan each day (e.g., new schedule every day, may need last-minute planning) Disruptions always occur. There is limited time available to adapt to change

Table 26 Adaptability: Proficiency Statements

Adaptability: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Demonstrate responsibility	Completes well-defined assigned tasks with minimal need for adjustments to the best of ability when given clear instructions and prioritization. Stays focused with reminders when there are few distractors in a predictable environment. Makes an effort to meet deadlines.	Completes tasks with minor variations and interruptions, especially with instructions, feedback, and a predefined framework. Manages time for sequential goals and deadlines with some guidance. Maintains focus and minimizes distractions with occasional reminders.	Takes initiative to reliably complete multiple tasks with unexpected variations and disruptions, switching focus between them efficiently and avoiding distractions. Uses tools and strategies to meet concurrent goals and deadlines, even when plans need to be adjusted.	Maintains a focused work environment and minimizes distractions, but effectively shifts focus when faced with unforeseen changes or urgent needs. Identifies and addresses potential roadblocks and communicates with others before they are impacted. Creates strategies to manage significant disruptions and adapts to changing demands and conflicting time constraints.	Consistently meets deadlines and achieves goals, staying focused in complex fast-paced fluid situations, adjusting on the fly with limited planning, and finding innovative solutions. Manages resources and priorities strategically for self and others, anticipating problems when possible and developing contingency plans. Delegates tasks effectively, empowers others, and holds themselves and their team accountable.
2. Persist and persevere	Persists in completing tasks exactly as planned with minimal adjustments. Works best with clear instructions, predictable situations, only minor setbacks, and a single goal. Relies on others for guidance about when to persist or adjust.	Anticipates minor variations and adjusts plans accordingly. Regularly reflects on progress and begins to identify situations requiring adaptation, especially for known upcoming changes. With some support, persists through change or adapts plans to complete subsequent goals.	Proactively anticipates change, continuously reflects on progress, and adjusts plans accordingly. Develops contingency plans taking into account multiple goals and tasks. Perseveres towards goals even when faced with challenges, finding alternative solutions or modifying the approach when needed. Independently switches between persistence and adaptation based on the situation.	Reacts to unexpected changes by quickly adjusting plans if needed. Deals with complex situations with multiple goals and conflicting demands, continuously evaluating progress, anticipating major changes, persisting through challenges, and adapting strategies. Encourages discussion and a growth mindset in others when it comes to adapting to challenges.	Makes quick and strategic decisions whether to persist or completely revise approach when unforeseen changes arise. Continuously reflects with a future-oriented mindset, anticipating potential challenges and creating adaptable plans, even with multiple dynamic goals and shifting priorities. Mentors others to navigate change and adapt effectively, fostering a culture of continuous learning and calculated risk-taking.
3. Regulate your emotions when appropriate	Maintains a positive outlook in a predictable environment. Stays calm or recovers quickly from minor frustrations. Relies on guidance to manage emotions and refocus during setbacks or unexpected challenges.	Maintains a positive outlook while managing sequential goals and multiple deadlines. Manages emotions somewhat effectively with setbacks and unexpected disruptions, but may still benefit from support. Offers basic encouragement to others experiencing emotional challenges.	Maintains a positive outlook despite unexpected challenges with concurrent goals and multiple tasks. Regulates emotions effectively and independently, using coping mechanisms and reframing techniques to maintain composure or recover quickly from setbacks and refocus on tasks. Encourages and supports others facing challenges to remain calm.	Demonstrates a consistently positive outlook even when managing multiple goals with conflicting demands and deadlines. Stays calm under pressure and rapidly recovers from significant emotional challenges using a variety of strategies. Fosters a positive and productive team environment by proactively sharing emotional regulation strategies and supporting others to stay calm during challenges.	Demonstrates a consistently positive outlook even in complex, highly fluid situations with constant pressure. Manages emotions using advanced techniques or even developing new strategies, recovering quickly and effectively. Serves as a source of calm and encouragement for others, creating a supportive culture that allows others to feel comfortable expressing emotions and developing strategies for coping with stress.
4. Set or adjust your goals and expectations	Accepts goals and expectations set by others with minimal understanding of underlying factors. Relies on others to define standards for achieving goals. Maintains original goals and expectations with minimal adjustments.	Sets goals for each step in a sequence with instructions and a pre-defined framework. Begins to understand the relationship between skill sets, resources, and achievable goals. With some support, identifies basic criteria for reaching goals and adjusts expectations for minor issues but relies on others for significant changes.	Independently sets achievable concurrent goals for multiple tasks, considering skills, resources, and potential supports. Defines clear success criteria for each goal. Makes informed adjustments to expectations and goals based on progress and changing circumstances.	Sets ambitious yet achievable goals while considering competing deadlines and priorities, long-term impact, and potential challenges. Defines clear and measurable success metrics for goals, even complex ones. Regularly reviews and revises goals, even creating new ones, in response to changing priorities or circumstances. Involves others as appropriate and informs those who may be impacted.	Sets ambitious yet achievable goals for complex projects and overlapping deadlines, collaborating with others and considering individual and team resources. Develops adaptable success criteria for individual and team goals. Continuously monitors progress and adjusts goals in response to rapid changes and evolving resources and priorities. Effectively communicates complex adjustments in goals with others to maintain buy-in. Mentors others in setting and adjusting goals effectively.
5. Plan and prioritize	Follows pre-defined tasks and task sequences provided by others, especially with a single goal. Maintains original plan with minimal adjustments when faced with changes.	Creates simple plans with steps, but may lack details and not consider all aspects. Prioritizes tasks within each goal with some support, but focuses more on urgency than importance. Adjusts task priorities in response to minor changes with clear instructions or support.	Independently creates detailed plans with well-defined tasks, milestones, and timelines. Prioritizes tasks based on urgency, importance, and resources. Regularly reevaluates priorities based on the evolving situation and adjusts tasks and timelines to maintain effectiveness, even with unexpected changes.	Creates flexible plans with potential adjustments for conflicting goals. Prioritizes dynamically, adapting to changing circumstances and resources, and creating entirely new plans when faced with major changes. Communicates plans and changes to others effectively.	Creates strategic and adaptable plans for complex projects in highly fluid environments while working with others. Prioritizes tasks considering individual strengths, team dynamics, current needs, and long-term goals. Proactively plans for major changes, developing contingency plans and proposing entirely new approaches when needed. Communicates effectively and mentors others to maintain team focus and efficiency

Adaptability: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
6. Seek self-improvement	Shows limited reflection on skills set and resources. Relies on others to identify areas for improvement. Learns from minor setbacks in predictable environments, especially with feedback.	Begins to reflect on performance with prompting from others. Identifies basic areas for improvement based on feedback, learns from setbacks, and tries to avoid repeating mistakes. However, may struggle to learning into improved performance.	Regularly reflects on performance and personal skill sets, considering unexpected changes and resource constraints. Identifies skill gaps and actively pursues learning opportunities (e.g., training, professional development). Learns from both successes and failures, analyzing mistakes and taking steps to develop new skills or utilize resources more effectively.	Continuously reflects on strengths and weaknesses, and identifies areas for improvement. Demonstrates a growth mindset, seeking out challenging experiences, critically analyzing setbacks, and seizing unexpected opportunities to learn and adapt skill sets. Encourages others to seek feedback, share knowledge, and participate in development opportunities.	Critically reflects on strengths and weaknesses of self and others to identify opportunities for growth and training within the team, especially for complex rapidly changing environments. Mentors and guides others to create a culture of open feedback, knowledge sharing, and experimentation for collective learning.

Table 27 Adaptability: Overarching Descriptions

	Entry	**Intermediate**	**Advanced**
Overarching descriptors	Can complete routine tasks and achieve a small series of goals when given clear instructions and supervision. Can adjust to and handle stress of minor disruptions and changes, personal setbacks, and a few deadlines. Can engage in occasional learning and apply new skills and knowledge to continuously improve.	Can complete varying tasks and achieve several concurrent goals with some autonomy in planning and goal setting. Can adjust to and handle stress of moderate disruptions and changes, setbacks that may affect others' work, and multiple deadlines. Can identify and engage in frequent learning, and adapt new skills and knowledge to continuously improve.	Can complete varying unpredictable tasks and achieve multiple goals with full autonomy in planning and goal setting for self and others. Can adjust to and handle stress of significant disruptions and changes, significant setbacks that impact entire teams, and multiple conflicting deadlines. Can recommend ongoing learning for self and others to prepare for future change and continuously improve.

CREATIVITY AND INNOVATION

Table 28 Creativity and Innovation: Dimensions

Dimensions	Level 1	Level 2	Level 3	Level 4	Level 5
Creativity and Innovation					
Degree of originality and uniqueness	Minimal elements of novelty and originality, often based on personal interpretation or modification of an existing idea (e.g., writing a story inspired by a classic fairy tale, but in a modern setting).	Some elements of novelty and originality, often by combining existing ideas in new and unique way (e.g., creating/planning a unique cake by combining two or more different flavours that are not typically used together)	Multiple elements that demonstrate a clear departure from existing norms, concept and approach within a familiar context (e.g., developing a course where new technology is used in a way that changes how information is delivered, how students participate and interact, and how they are assessed).	Broad range of elements that has the potential to change a field or domain, introduce new approaches or functionalities, and address previously unmet needs (e.g., creating a design for a new type of fabric that is both environment-friendly and durable).	Entirely new concepts or approaches with the potential to lead to breakthroughs or paradigm shifts (e.g., planning and proposing a new communication technology that would revolutionize the way people interact and exchange information).
Idea generation and divergence	Tasks require a basic idea that deviates from existing processes (e.g., suggest adding an FAQ page to website to improve customer experience).	Tasks require a few novel ideas that vary within a common category (e.g., different formats, processes, resources, timelines, or contexts) (e.g., suggest adding an FAQ page, phone line, and an online chat option to facilitate customer interactions).	Tasks require multiple novel ideas that vary across different but related categories (e.g., suggests adding a chatbot, emailing personalized recommendations, and creating a customer loyalty program to improve customer interactions).	Tasks require multiple novel and unconventional ideas that connect and apply information and resources in unexpected ways (e.g., suggests using augmented reality for product demonstrations, implementing gamification elements in customer interactions, or partnering with local businesses to provide package deals).	Tasks require continuous generation of highly novel ideas that push boundaries (e.g., suggest improving environment-friendly practices within the business and creating a marketing campaign to raise customer awareness, generate buy-in, and encourage participation in live production demo).
Relevance, quality, and value	Tasks involve generating new ideas, even if they aren't directly relevant to the situation	Tasks require generating new and relevant ideas, even if they may not be immediately practical.	Tasks involve generating new ideas that are not only relevant but also feasible and workable within the given constraints. Some adaptation or refinement might be needed to put them into action.	Tasks require generating new ideas that are relevant and applicable or usable with minimal adjustment.	Tasks involve generating transformative ideas that have the potential to be widely adopted and make significant impacts beyond the immediate situation.
Evaluation and improvement of own and others' ideas	Requires limited or passive participation in the evaluation and improvement of ideas	Requires active evaluation of ideas and suggestions for incremental improvements, focusing on clarity and practicality	Evaluation and improvement of ideas involves iterative adaptation, refinement and/or expansion based on feedback and context.	Evaluation and improvement of ideas involves strategic integration of diverse perspectives and areas of expertise, identification of limitations, and iterative improvement that may add or incorporate original elements.	Evaluation and improvement of ideas involves masterful transformation of ideas to increase relevance and originality.
Scope for experimentation and innovation	In a controlled environment, with a focus on testing feasibility or basic application. Impact of the innovation is limited to self.	In a broader but well-defined environment. Focuses on small deviations from existing processes (e.g., small change in a working process for self and a co-worker). Impact is limited to self and a few others.	Ventures beyond established routines and starts to challenge assumptions, but still has clear expectations for outcomes. More possibilities for testing and exploration. The innovation can impact a small group (e.g., evaluate options for web applications to help with notetaking and synthesis in team meetings).	Ventures into unfamiliar territory with more potential for unforeseen challenges and risks. Needs to turn ambiguity and uncertainty into inspirations and opportunities The innovation can impact a larger group (e.g., a school, a company) (e.g., test new ways to use materials, tools and equipment to manufacture a new product).	Steps out of personal comfort zone, pushes boundaries and/or ventures into uncharted territory. Potential for high levels of risk and uncertainty, and need for disruptive but transformative ideas that have systemic implications and impacts (e.g., build new applications of AI for medical purposes).

Table 29 Creativity and Innovation: Proficiency Statements

Creativity and Innovation: Proficiency Statements					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Identify the issue to be addressed	Identifies and articulates straightforward issues based on obvious signs. Can recognize basic elements of the problem and identify simple decision points in low-stakes situations.	Identifies routine issues and potential underlying problems or related issues. Recognizes the need for a decision, and can distinguish between urgent and less important issues.	Identifies problems or issues, distinguishing symptoms from root causes. Prioritizes critical issues. Considers multiple perspectives and potential impacts to accurately define problems and decision points and avoid significant losses.	Identifies core issues in complex situations, anticipates future challenges, and identifies interconnected factors related to the problem. Can identify high-stakes issues with potential widespread consequences.	Accurately identifies and articulates complex, often hidden problems, and is able to anticipate potential future issues based on trends or patterns. Considers multiple perspectives to analyze systemic issues that require long-term, strategic solutions to prevent catastrophic consequences.
2. Gather information to help you address the issue	Collects easily accessible data to address simple issues. Relies on familiar sources and procedures, often using personal knowledge or asking colleagues.	Gathers information from various sources to address routine issues. Can typically recognize biases in information and understands the importance of verifying data.	Collects information from multiple sources to identify the context and potential solutions for moderately complex problems. Evaluates information for accuracy and relevance, and begins to manage biases and actively seek diverse perspectives.	Systematically gathers and analyzes information from diverse sources to address complex problems. Identifies potential knowledge gaps, consults experts, critically evaluates data for accuracy and bias, and ultimately identifies patterns and trends to address complex issues.	Conducts thorough research on complex issues, systematically gathering information from diverse sources. Analyzes data in-depth, considering multiple perspectives to form comprehensive understandings and identify potential solutions to systemic problems. Effectively synthesizes findings and addresses biases to inform decision-making.
3. Analyze the issue	Recognizes basic elements of simple problems and can identify obvious connections between pieces of information related to the problem.	Identifies the main components of problems. Breaks down simple issues into their core components, identifying connections and recognizing some patterns.	Breaks down complex issues into smaller parts, considering multiple perspectives to understand potential causes and effects, patterns, and relationships between information.	Conducts thorough analysis to understand complex problems by considering multiple viewpoints and potential outcomes. Identifies root causes, hidden factors, and potential consequences of solutions.	Expertly analyzes highly complex issues by synthesizing information from multiple sources. Identifies intricate relationships, potential solutions, and long-term consequences amidst uncertainty. Employs critical and systems thinking to develop innovative approaches considering various perspectives and stakeholders.
4. Develop multiple routes of action	Generates simple solutions to easy problems, thinking of the immediate consequences.	Generates a few potential solutions for simple issues. Evaluates potential solutions based on given criteria and considers short-term impacts.	Generates multiple practical solutions to complex problems. Considers the factors, constraints, and short- and long-term impacts of potential solutions.	Generates a variety of solutions to address highly complex problems. Evaluates the options based on multiple criteria including feasibility, potential consequences and risks, effectiveness, and short- and long-term impacts on multiple stakeholders. Ultimately selects the best solution based on various criteria.	Generates highly complex solutions for intricate or large-scale problems. Considers long-term impacts, unintended consequences, long-term sustainability, potential challenges, and ethical implications while creating comprehensive action plans with multiple contingencies.
5. Address the issue	Selects and implements a simple solution with minimal analysis, planning, or consideration of alternative solutions.	Chooses a suitable course of action, and implements the solution with some planning, monitoring progress and making adjustments as needed.	Makes informed decisions to select the most appropriate course of action. Implements the chosen solution with a structured plan, adapting as needed based on feedback.	Develops and implements strategic plans to solve complex problems, making informed decisions based on a thorough analysis of potential solutions, anticipating potential challenges. Makes necessary adjustments based on ongoing evaluation to achieve optimal outcomes.	Uses expert judgement to develop a comprehensive strategy to address highly complex problems, considering multiple factors and constraints. Implements a flexible plan and adapts to changing circumstances, using ongoing evaluation to make evidence-based improvements.
6. Evaluate the effectiveness of the solution or decision	Assesses the immediate impact of a simple solution, recognizing if the solution met its intended purpose using existing basic criteria and providing basic feedback.	Evaluates the effectiveness of a solution or decision. This includes assessing overall success using existing criteria, identifying key outcomes, and suggesting improvements.	Evaluates effectiveness of solution, considering multiple factors, long-term impacts, unintended consequences, and established goals. Identifies strengths, weaknesses, and areas for improvement, ultimately learning from the process.	Evaluating a complex solution or process. This evaluation involves assessing outcomes against predefined standards, identifying factors contributing to success or failure, learning from experiences, and determining areas for improvement. Generates best practices or refinements to optimize future applications and inform decision-making.	Critically analyzes complex solutions or decisions, assessing their long-term impacts, evaluating the sustainability of the solution, identifying systemic issues, and providing recommendations for improvement. Gathers input from various stakeholders and using evaluation frameworks to guide the analysis. Synthesizes analysis to identify broader implications, insights, and best practices to share systemically.

Table 30 Creativity and Innovation: Overarching Descriptions

	Entry	Intermediate	Advanced
Overarching descriptor	Can generate a few ideas with elements of originality and novelty. Can participate in the evaluation and refinement of ideas but with a focus on basic improvements and clarity. Creativity and innovation impact is limited to self or a few individuals.	Can generate multiple novel ideas across different but related task categories. Can move ideas forward by evaluating and improving relevance and applicability. Can test and explore innovation in a broader environment in ways that can impact a small group.	Can generate original and unconventional ideas, and introduce potentially transformative concepts or approaches. Can iteratively evaluate and improve ideas to maximize relevance and applicability. Can embrace uncertainty and risk to generate impacts for large groups, or even on a systemic level.

OPPORTUNITIES FOR FUTURE WORK

The Expert Panel recognized the momentum that these proficiency materials could generate in the future, and shared some ideas around opportunities for further work. In this section, we describe four major areas that support the continuous development and improvement of the Skills for Success proficiency materials.

PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR SKILLS FOR SUCCESS PRACTITIONERS

Panel members identified the need to provide training and upskilling opportunities for practitioners to support uptake of the proficiency materials. The development of curriculum or training materials requires a specific skillset, separate from instructing or facilitating. To increase the appropriate and broad application of the proficiency materials is likely to require training, especially until there is an established body of resources available for widespread use.

> *"So like if we look at something like reading: "can identify goals, main ideas and purpose of short simple documents". What would a learning actually be look like? What does that mean in terms of a learning activity? It takes a pretty experienced instructor to be able to create a learning activity that has those things in it, and that's the challenge right now."*
> - Panel member

As well as supporting curriculum development, the proficiency materials have the potential to help instructors monitor learning progress and identify areas where extra support is needed. However, Panel members noted that upskilling may be required to support practitioners to apply the proficiency materials in this way.

> *"[I]t's about trying to teach it now to other practitioners… when you're you have a learner who's struggling with something like teamwork, how do you pinpoint where they're struggling? What's going wrong? What do you need to do to build those skills that will really test this kind of dimensions and the progression of complexity and proficiency?"*
> - Panel member

In particular, the need for upskilling was seen as important to empower practitioners to adapt the materials to meet the needs of diverse learner populations and training contexts. Several of the Panel members spoke the important role practitioners play in training, and the extensive knowledge and experience practitioners have, often resulting from years of experience working

with learners. If guidance and upskilling opportunities are made available, practitioners have the potential to leverage the proficiency materials to generate and implement customized assessments, monitor training progress, and support learners.

ENHANCING THE PRACTICALITY AND RIGOUR OF ASSESSMENT TOOLS BASED ON THE PROFICIENCY MATERIALS

In addition to increasing sectoral capacity, Panel members identified the opportunity to leverage the proficiency materials to inform the development assessment tools. This echoed the considerations for assessment development in the Skills for Success launch report (see Palameta et al., 2021, p. 52-75). Panel members reiterated that developing a range of reliable, validated assessments that suit different needs (e.g., high and low-stakes assessments), varying levels of ease of delivery (e.g., self-report, observation), and frequency (e.g., one-point-in-time, longitudinal) continued to be an important goal to work towards.

> *"[I]t's partly empowering practitioners to say: You know the client best. Use this broad framework because we know there's so much variation that we don't want to limit anyone's ability to use this tool. So rather than looking for the manual that will tell you step by step, it's a matter of building your own confidence and skills to be able to make that call."*
> - Panel member

The level of detail the proficiency materials provided, with dimensions and proficiency statements for each of the six skill components, is a promising starting point for assessment development. Panel members engaged in thoughtful discussion around the challenges of assessing social emotional Skills for Success presents challenges. While the proficiency statements describe observable behaviours and the dimensions outline task context, the social emotional skills remain more subjective and difficult to evaluate.

> *"[H]ow we assess literacy skills is going to look quite different than how we assess behavioral social emotional skills, I think. And so I think trying to align that is going to be really challenging."*
> - Panel member

One Panel member shared the example of the difficulty assessing a skill like Creativity and Innovation presents: "Unless you're observing, unless you're talking with the person, unless you have a chance to evaluate those ideas in a specific context, you don't know how good those ideas are. It would be so challenging to create a standardized assessment, because the valuation of whether the idea is good or bad would be a perspective of the assessor—and they may be right or might be wrong."

While addressing these challenges, Panel members emphasized the importance of incorporating diversity considerations into the materials developed, taking into account the cultural context

and lived experience of learners to develop tools that support ongoing engagement in learning and recognize the broad range of the ways that skills can be demonstrated. In the words of one Panel member, "we need to be operating in a way that reflects the fact that there is this much diversity."

One Panel member emphasized the value that experienced practitioners can bring to the development process. Those with experience working with learners from diverse groups have the familiarity and experience required to identify where learning and assessment needs may differ for diverse learners, and how existing tools can be enhanced or re-thought to apply to a broader range of users. Including practitioner perspectives—and indeed, learner perspectives—in the development process will be crucial to developing tools that reflect the diversity of background, lived experience, learning styles, and training contexts.

> *"[I]t would really be the practitioners that know what are the most common scenarios, and where do they run up against some challenges applying the existing kind of models of frameworks to these diverse and unique kind of experiences that many learners are coming with"*
> - Panel member

As well as addressing the needs for inclusivity in increasingly diverse training contexts, Panel members identified the importance of developing tools that apply different assessment methodologies, including self-assessment and observational assessments. Creating tools with diverse assessment approaches enables practitioners to triangulate results. In addition to different quantitative assessment methodologies, one Panel member also called for the inclusion of resources to support qualitative, relationship-based assessment tools. Qualitative assessment tools can provide a more comprehensive narrative of a learners' skill level, and also the strengths and barriers that influence their learning progress.

> *"So many of the learners are coming with some lower confidence about their abilities and skills, and the qualitative piece, when done right, really goes a long way to getting their advice, their lived experience, their best knowledge into the process and engaging them more in learning."*
> - Panel member

Overall, the clear need for a diverse set of assessment tools—including high- and low-stakes, qualitative and quantitative, self-report and observational assessments—that meet the needs of diverse learners in varied training contexts was emphasized by the Panel.

CUSTOMIZING THE MATERIALS TO ADDRESS SPECIFIC SECTORAL NEEDS

Going beyond the development of general training and assessment materials, the proficiency materials provide a foundation for the development of sector-specific resources. The development of such focused resources can be used to tighten the alignment between skills training and labour demands, and ultimately increase skill-commensurate employment.

Consultation with sectoral representatives and the development of training and assessment resources that are specific to occupational or sectoral needs will further enhance the utility of the Skills for Success framework and proficiency materials. Through partnership with employers, training can be aligned with specific skill and labour needs, strengthening connection between training and employment. These projects are likely to require ongoing collaboration to stay relevant to the changing nature of work, including the increasing role of automation and technology in employment.

> *"[I]t is very important for the purpose of evaluation, training development and the level of complexity, to be able to refer to authentic tasks of the current environment and sector of employment (main functions) they adapt to learning and life in general."*
> - Panel member

The proficiency materials provide an opportunity and a set of standard language through that can provide the basis for customizing materials. However, there will be a need to adapt the format and language of the materials to align with the terminology and focus of employers—namely, the business objectives, key performance indicators, and skill needs. In the words of one Panel member: "until we can speak the language that employers and learners understand, it's going to be [a] continued challenge to push this out broadly in in to practice."

DATA-DRIVEN REVISION OF PROFICIENCY MATERIALS

Throughout this project, the Expert Panel continually reiterated the central importance of generating evidence-based proficiency materials. This current project was recognized as a valuable first step in informing the implementation of Skills for Success training and assessment, particularly due to the lack of other proficiency and assessment resources available for the social emotional Skills for Success (and social emotional skills more broadly). Indeed, the majority of the skills frameworks scanned in our literature review did not include detailed proficiency or assessment materials.

However, Panel members strongly recommended that these the publication of the proficiency materials be followed with opportunities for revision based on practitioner feedback and large-scale quantitative data. The proficiency materials developed in this project are a resource, developed through thorough review of existing literature and consultation with early adopters of Skills for Success, from which to develop general and sector-specific assessment tools, as described above. In turn, the data collected from these assessment tools can be used to refine the proficiency materials and, in a much longer time horizon, the Skills for Success definitions and components themselves.

"The [Skills for Success] framework is already out there, and we can't wait for the data to come in. We need to provide guidance for practitioners. It may not be the perfect time, but we don't want to get stuck never putting it out there. So let's put it out and then still have opportunities to refine it later – to make sure that there built-in safeguard of a plan to refine it."
- Panel member

The ongoing development of the proficiency materials—and more broadly, the Skills for Success resources as a whole— in collaboration with practitioners and representatives of diverse learner and sectoral groups will support the continued relevance and positive impact of Skills for Success in dynamic and evolving learning and work contexts.

CONCLUDING REMARKS

The materials developed through this project represented a first step toward a stronger, more valid, and more reliable understanding of proficiency levels for Skills for Success. We consolidated the latest research and consulted with an Expert Panel to synthesize existing knowledge to inform the proficiency materials. This represented the best possible effort given that the Skills for Success model was launched less than three years ago. We intended for these materials to inspire and guide future work. A lot more iterations of implementation, data collection, validation, synthesis, revisions and updates would be needed to advance the field toward a more evidence-based understanding of Skills for Success proficiency. For now, we aimed to ensure future initiatives could be built on the strongest possible conceptual foundation, supporting the continued effort to design and implement Skills for Success training and assessment.

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APPENDIX A: SKILLS FOR SUCCESS – OASIS INTEROPERABILITY

The Skills for Success (SFS) proficiency framework is a tool that works in parallel with similar resources that serve related, although not identical, purposes. In particular, the Occupational and Skills Information System (OaSIS) is also engaging in work to develop competencies, although with an emphasis on use by employers and jobseekers rather than trainers, assessment developers, and learners. There is the opportunity for future work to promote interoperability between the frameworks to the extent possible, while maximizing the value of each of the tools developed.

Occupational and Skills Information System (OaSIS)

OaSIS 2023 Version 1.0 is a database that links 241 competencies to 900 occupations, aligning with the National Occupational Classification (NOC) system and the Skills and Competencies Taxonomy (SCT). It was designed based on best practices and lessons learned from international examples, including the American O*NET system, but tailored to reflect the Canadian labour market and meet the needs of Canadian users. The SCT itself was informed by a variety of national and international competency frameworks, including the ESDC products (e.g., NOC, Career Handbook, Skills and Knowledge Checklist), the Essential Skills Profiles, the American O*NET system, and other frameworks. The SCT streamlines the vast range of occupational descriptors used in the labour market to improve comparability and application of concepts. The descriptors are organized into seven categories (Abilities, Personal Attributes, Interests, Skills, Knowledge, Work Context, Work Activities) that are further divided into sub-categories. Although SCT includes a Skills category, the skills are defined differently than those of Skills for Success. Moreover, Skills for Success and subcomponent elements are sometimes dispersed across a range of Skills, Abilities, and Personal attributes.

Within OaSIS, SCT elements are rated on a 5-point scale (for skills, abilities, and work activities) and a 3-point scale (for Knowledge and some work context descriptors) according to the Canadian Rating Guide. Skills and abilities are rated on proficiency, personal attributes are rated on importance, work activities are rated on complexity, and work context are rated on specific work dimensions (e.g., degree of automation). The ratings guide was first developed as an internal tool to delineate the levels and to help with the attribution and the understanding of ratings for occupations. The guide includes general common elements based on 2 indicators identified for each descriptor, examples of relevant job titles, and relevant tasks for each level. Later this year, the guide will be available upon request.

The Labour Market Information Directorate (LMID) OaSIS development team shared examples of proficiency descriptors with the indicators used for the descriptors in the skills and abilities categories (see Appendix B). SRDC has used this resource to examine alignment with our Skills for Success preliminary proficiency descriptors at a high level, primarily looking at the types of indicators or dimensions used and if there are gaps in our descriptors. A more rigorous and systematic review and alignment will be needed in the future. In the meantime, ESDC is conducting an analysis of the alignment between Skills for Success and the SCT, with preliminary results suggesting that a "crosswalk" can be built between the two frameworks by mapping Skills for Success constructs to elements of the SCT (Roberts et al., 2023).

Facilitated by ESDC, SRDC and the LMID OaSIS development team collaborated throughout this project to identify the separate use-cases of the tools. The two frameworks were developed through different processes and are built for distinct but overlapping purposes (see Table 31). OaSIS and SCT explicitly and directly describes the world of work and occupations, while Skills for Success is meant to apply more broadly to help individuals thrive in community, learning, and work.

Table 31 Comparing OaSIS and Skills for Success

OaSIS	Skills for Succes Proficiency
Objective	
▪ Describes the occupational requirements for a large number of occupations for those whose goal is an employment outcome. ▪ Designed for use primarily by employment and career counsellors, employers, and job seekers (especially those focused on a particular sector or occupation).	▪ Describes foundational skills that support activities in work, learning, and life for the broad population. ▪ Designed primarily for use by curriculum and assessment developers, trainers/instructors, and learners (especially those building general pre-employment skills).
Key content	
▪ Skills and Competencies Taxonomy – Streamlines, organizes, and structures occupational descriptors.	▪ Skills and skill components – Describe foundational skill behaviours that apply broadly to many contexts.
Proficiency	
▪ Canadian Rating Guide – Ratings for each skill, ability, etc. Ratings of proficiency, importance, complexity, and other specific dimensions *in occupational contexts*(?) ▪ Task-based language in an occupation-specific employment context.	▪ Ratings intended to reflect proficiency aligned with learning progression in a training context. ▪ Scenario-based descriptors that are general enough to apply across many different sectors, employment, and life and learning contexts.

However, it is clear there are situations where both frameworks converge, such as when a trainer needs to design and deliver skills training that is tailored to a sector or occupation, an employer needs to identify skills training opportunities for staff, or an individual is assessing skill gaps for an occupation of interest. There may be opportunities for future alignment of the two frameworks to increase the interoperability, or use of the tools for different but complimentary purposes.

APPENDIX B: CANADIAN RATING GUIDE (DRAFTS)

CANADIAN RATING GUIDE (CRG) FOR ABILITIES – SAMPLE – SEPTEMBER 26, 2024

This document includes a table with the indicators used to measure descriptors in the Abilities category, along with a sample of CRG for three descriptors: Mathematical Reasoning, Numerical Ability and Verbal Ability.

ABILITIES				
Similarity Group	**Descriptor**	**Definition**	**1st Indicator**	**2nd Indicator**
COGNITIVE ABILITIES				
Idea Generation and Reasoning Abilities	Categorization Flexibility	The ability to generate or use different sets of rules for combining or grouping things in different ways	Complexity of elements to be combined or grouped	Complexity of rules for categorization that can be generated or used
	Deductive Reasoning	The ability to apply general rules to produce logical answers for specific problems	Complexity of topics	Complexity of rules
	Fluency of Ideas	The ability to come up with multiple ideas about a topic	Complexity of topics	Number of ideas
	Inductive Reasoning	The ability to combine pieces of information to form general rules or conclusions, which includes finding a relationship among seemingly unrelated events	Complexity of topics	Complexity of rules
	Information Ordering	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations)	Complexity of rules or sets of rules used to order things or actions	Complexity of things or actions required to be ordered
	Problem Identification	The ability to identify an existing or potential problem. It is not about solving the problem, but only about recognizing its presence	Prominence of problem	Complexity of systems
Quantitative Abilities	Mathematical Reasoning	The ability to choose the right mathematical methods or formulas to solve a problem	Complexity of mathematical methods or formulas	Complexity of problems to be solved using mathematical methods or formulas
	Numerical Ability	The ability to carry out arithmetical processes accurately such as addition, subtraction, multiplication, or division	Complexity of calculations	Volume of arithmetical operations
Memory Abilities	Memorizing	The ability to remember information such as words, numbers, pictures, or procedures	Amount of information to be memorized	Speed that information needs to be recalled from memory
	Multitasking	The ability to shift back and forth between two or more activities or sources of information during the same time period (such as speech, sounds, touch, or other sources)	Number of activities or sources of information that need to be shifted between during a time period	Complexity of concurrent activities
	Pattern Identification	The ability to identify or detect a known pattern such as a figure, object, word, or sound that is hidden in other information or material	Complexity of tasks requiring pattern identification	Degree of similarities between the element to be identified and the distracting material
	Pattern Organization Speed	The ability to quickly combine and organize information into meaningful patterns	Complexity of information	Speed that information needs to be organized into meaningful patterns
	Perceptual Speed	The ability to compare, quickly and accurately, similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time, one after the other, or with a remembered object	Complexity of sets of elements needed to be compared	Speed required to process differences and similarities between elements
Spatial Abilities	Spatial Orientation	The ability to know your location in relation to the environment or know where objects are in relation to you	Diversity of the physical environment	Degree of interaction with the physical environment
	Spatial Visualization	The ability to think visually about geometric forms, comprehend the two-dimensional representation of three-dimensional objects and recognize the relationships resulting from the movement of objects in space	Intricacy of forms to visualize	Number of steps required between visualization of objects and their final representation
Communication Abilities	Verbal Ability	The ability to understand the meaning, precise use, associated ideas, and relationships of spoken words; and to use them in the proper context when presenting information or ideas	Vocabulary complexity	Complexity of sentence structure
	Written Comprehension	The ability to read and understand information and ideas presented in written form	Complexity of sentence structure	Vocabulary complexity
	Written Expression	The ability to communicate information and ideas in writing and adapting the writing style to the audience so that they can understand	Vocabulary complexity	Complexity of sentence structure
Other Cognitive Abilities	General Learning Ability	The ability to grasp, understand and assimilate new information and instructions, and their underlying principles and to filter them through reasoning and judgment	Complexity of information and concepts that need to be understood and applied	Up-to-date knowledge required by the work environment
	Selective Attention	The ability to concentrate on a task over a period of time without being distracted	Complexity of task	Duration of the task
PHYSICAL ABILITIES				
Physical Strength Abilities	Dynamic Strength	The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue	Level of endurance required for tasks	Level of muscle force required
	Explosive Strength	The ability to exert short bursts of muscle force to propel oneself (as in jumping or sprinting), to throw an object, or to apply force with a tool	Muscle force required for each burst of strength	Frequency of short burst of muscle force
	Static Strength	The ability to exert muscle force to lift, push, pull, carry, or transfer objects	Weight by frequency (based on the Matheson table for Physical Demands)	Typical energy required

Similarity Group	Descriptor	Definition	1st Indicator	2nd Indicator
	Trunk Strength	The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without "giving out" or fatiguing	Duration of task requiring trunk strength	Level of strength in abdominal and lower back muscles
Flexibility, Balance, and Coordination	Body Flexibility	The ability to bend, stretch, twist, or reach with your body, arms, and/or legs	Difficulty of position required to perform tasks	Duration of tasks performed in difficult positions
	Gross Body Coordination	The ability to coordinate the movement of your arms, legs, and torso together when the whole body is in motion	Complexity of movements required for tasks	Duration of task requiring coordinating limbs while body is in motion
	Gross Body Equilibrium	The ability to keep or regain your body balance or stay upright when in an unstable position	Degree of instability of work environment	Duration of tasks requiring keeping balance
	Multi-Limb Coordination	The ability to coordinate two or more limbs, such as two arms, two legs, or one leg and one arm, while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion	Intensity of effort requiring multi-limb coordination	Duration of task requiring coordination of limbs
Endurance	Stamina	The ability to perform intense physical activities over long periods without becoming winded or out of breath	Intensity of physical activities	Duration of physical activities
PSYCHOMOTOR ABILITIES				
Fine Manipulative Abilities	Arm-Hand Steadiness	The ability to keep your hand and arm steady while moving or holding them in one position	Duration that arms and hands need to be held stable	Precision required for task
	Finger Dexterity	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble small objects	Precision of finger movements required to complete tasks	Duration of tasks involving grasping, manipulating, or assembling small objects
	Manual Dexterity	The ability to move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects or tools	Precision of hand movements required to complete tasks	Duration of tasks involving grasping, manipulating, or assembling objects or tools
Control Movement Abilities	Control of Settings	The ability to adjust the controls of a machine or a vehicle to exact positions	Precision required for task	Frequency of task
	Hand-Eye Coordination (Motor Coordination[1])	The ability to integrate visual processing and motor ability to guide accurately and with precision the movement of hand/fingers in response to visual stimuli	Degree of synchronization required between visual processing and hand/fingers movement	Complexity of task involving coordination of eyes, hands/fingers
	Multi-Signal Response	The ability to choose quickly between one or more movements with the hand, finger, or foot in response to the appearance of two or more different signals such as lights, sounds, or images	Speed of choice when reacting to multiple signals	Complexity of movements required in response to signals
	Rate Control	The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object	Precision of timing	Frequency of timing movements
Reaction Time and Speed Abilities	Finger-Hand-Wrist Motion	The ability to make fast, simple, and repeated movements of the fingers, hands, and wrists	Intensity of manual operations involving fast, simple and repeated movements	Duration of tasks requiring movements of fingers, hands and wrists
	Reaction Time	The ability to respond quickly with one or more limbs to a stimulus such as noise, light or image	Stimulus detection time	Speed of reaction required
	Speed of Limb Movement	The ability to quickly move the arms and legs	Speed of limbs required to perform tasks	Duration of tasks requiring fast arm and leg movement
SENSORY ABILITIES				
Auditory and Speech Abilities	Auditory Attention	The ability to give full attention on a single source of sound in the presence of other distracting sounds	Volume of distracting sounds in work environment	Frequency of listening to a single source of sound
	Hearing Sensitivity	The ability to detect or distinguish the differences between sounds in terms of pitch and volume	Degree of similarity of sounds to distinguish	Volume of sound
	Sound Localization	The ability to identify the direction, origin and distance from which a sound comes	Volume of sound	Level of background noise
	Speech Clarity	The ability to articulate and pronounce words clearly, so others can understand you when you speak	Quality of pronunciation required	Duration of speech
	Speech Recognition	The ability to identify and understand the speech of another person	Degree of familiarity with the voice to be recognized	Quality of pronunciation to decipher
Visual Abilities	Colour Perception	The ability to match or detect differences or similarities between colours, including shades of colour and brightness	Contrast between colours, shades and brightness	Frequency of tasks requiring colour perception
	Depth Perception	The ability to discern which of several objects is closer or farther away from you, or to estimate the distance between you and an object	Distance estimation accuracy	Frequency of tasks requiring depth perception
	Far Vision	The ability to see details of objects and people at a distance	Size of objects required to see at a distance	Level of detail required to see clearly
	Form Perception	The ability to perceive pertinent details; to make visual comparisons and discriminations; and to see differences in shapes and shadings of figures and widths and lengths of lines in objects and graphic material	Intricacy of forms to distinguish	Contrast between textures, shading and brightness
	Glare Tolerance	The ability to see objects or people, in the presence of glare or bright lighting	Intensity of glare	Duration of exposure to glare or bright lighting
	Near Vision	The ability to see details at close range	Level of details required to see at close range	Duration observing close details
	Night Vision	The ability to see under low light conditions	Level of low light conditions	Duration of time required to work in low light conditions
	Peripheral Vision	The ability to see objects, people, or their movement in the peripherical field of vision when looking ahead	Level of detail required to be perceived in peripheral field	Frequency of tasks requiring peripheral vision

CANADIAN RATING GUIDE (CRG) FOR ABILITIES – SAMPLE – SEPTEMBER 26, 2024

Mathematical Reasoning

Mathematical Reasoning: The ability to choose the right mathematical methods or formulas to solve a problem					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
General Common Elements *based on the following indicators:* *1. Complexity of mathematical methods or formulas* *2. Complexity of problems to be solved using mathematical methods or formulas*	***Primary indicator:*** *Very simple mathematical methods or formulas, commonly used in basic arithmetic and simple geometric shapes (e.g., addition, subtraction, or identifying shapes)* ***Secondary indicator:*** *Very simple problems to be solved using mathematical methods or formulas (e.g., counting objects or identifying shapes in everyday contexts)*	***Primary indicator:*** *Simple mathematical methods or formulas, commonly used in basic arithmetic operations (e.g., fractions, percentages, and simple geometric formulas)* ***Secondary indicator:*** *Simple problems to be solved using mathematical methods or formulas (e.g., calculating the total cost of multiple items including tax or calculating the size of an area)*	***Primary indicator:*** *Moderate complexity of mathematical methods or formulas (e.g., basic algebraic concepts, introductory statistics, and more detailed geometric concepts, properties of angles or basic volume calculations)* ***Secondary indicator:*** *Moderate complexity of problems to be solved using mathematical methods or formulas, (e.g., combining different mathematical operations, interpreting simple graphs, or applying basic algebra to find unknowns)*	***Primary indicator:*** *Complex mathematical methods or formulas (e.g., quadratic equations, trigonometry, and more complex statistical measures, standard deviation or simple probability)* ***Secondary indicator:*** *Complex problems to be solved using mathematical methods (e.g., solving a system of equations with multiple variables or using trigonometry to solve problems involving angles and distances)*	***Primary indicator:*** *Very complex mathematical methods or formulas (e.g., advanced algebra, calculus concepts, complex geometrical theorems, and deep exploration into probability and statistics)* ***Secondary indicator:*** *Very complex problems to be solved using mathematical methods or formulas (e.g., optimizing solutions, analysing complex trends, or applying mathematical reasoning to theoretical or practical problems)*
Example Tasks	• Fill sprayer tanks with water and chemicals, according to formulas (22114.05) • Explain and calculate parking charges, and collect fees from customers (65329.05) • Count and verify tickets and seat reservations and record numbers of passengers boarding and disembarking (75210.03) • Mix feed, additives, and medicines in prescribed portions (85102.00) • Verify dimensions of parts machined using micrometers, callipers and other precision measuring instruments (94106.00)	• Review event bills for accuracy and approve payment (12103.00) • Conduct inspections and tests of a variety of mechanical and electronic weighing and measuring devices and systems (22231.04) • Interpret exercise program participant data to evaluate progress or identify needed program changes (31204.02) • Inspect, weigh, and measure products to verify conformance to specifications, using instruments such as micrometers, calipers, magnifiers, or rulers (53124.02) • Perform various financial activities, such as cash handling, deposit preparation, and payroll (62020.00)	• Manage communications budgets (10022.04) • Collaborate with estimators to cost projects, create project plans, or coordinate bids from landscaping contractors (21201.00) • Prepare, administer, and grade tests and assignments to evaluate students' progress (41220.00) • Manage funeral home operations including hiring and directing staff, maintaining financial records, preparing accounts and ordering merchandise (62201.01) • Inspect equipment or monitor operating conditions, meters, and gauges and make calculations to determine load requirements and detect malfunctions (92101.01)	• Compute final estimation of property values, taking into account such factors as depreciation, replacement costs, value comparisons of similar properties, and income potential (12203.02) • Analyse data and prepare reports using mathematical processes (22110.01) • Analyse prescribing trends to monitor patient compliance and to prevent excessive usage or harmful interactions (31120.01) • Study market research and trends to determine consumer demand, potential sales volumes and effect of competitors' operations on sales (60020.00) • Develop budgets or approve expenditures for supplies, materials, or human resources, ensuring that materials, labour, or equipment are used efficiently to meet production targets (90010.00)	• Valuate financial reporting systems, accounting procedures and investment activities and make recommendations for changes to procedures, operating systems, budgets and other financial control functions to senior managers and other department or regional managers (10010.00) • Select and apply complex mathematical theories, formulas and models for practical problems in business, engineering, science and other fields (21210.01) • Apply statistical theory and methods to provide information in scientific and other fields such as biological and agricultural science, business and economics, physical sciences and engineering, and the social sciences (21210.02) • Apply mathematical models to forecast and calculate the probable future costs of insurance and pension benefits (21210.03) • Compile, analyse, and report data to explain economic phenomena and forecast market trends, applying mathematical models and statistical techniques (41401.00)
Example Occupations	• Landscape gardeners (22114.05) • Parking lot attendants and car jockeys (65329.05) • Ferry terminal workers (75210.03) • Aquaculture and marine harvest labourers (85102.00) • Machining tool operators (94106.00)	• Conference and event planners (12103.00) • Inspectors, weights and measures (22231.04) • Kinesiologists and exercise therapists (31204.02) • Glass blowers (53124.02) • Food service supervisors (62020.00)	• E-business managers (10022.04) • Landscape architects (21201.00) • Secondary school teachers (41220.00) • Funeral directors (62201.01) • Water treatment plant operators (92101.01)	• Business valuators (12203.02) • Biological technologists (22110.01) • Community pharmacists and hospital pharmacists (31120.01) • Retail and wholesale trade managers (60020.00) • Manufacturing managers (90010.00)	• Financial managers (10010.00) • Mathematician (21210.01) • Statisticians (21210.02) • Actuaries (21210.03) • Economists (41401.00)

CANADIAN RATING GUIDE (CRG) FOR ABILITIES – SAMPLE – SEPTEMBER 26, 2024

Numerical Ability

Numerical Ability: The ability to carry out arithmetical processes accurately such as addition, subtraction, multiplication or division					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
General Common Elements *based on the following indicators:* *1. Complexity of calculations* *2. Volume of arithmetical operations*	***Primary indicator**: Very simple calculations; jobs often involve single-step arithmetical operations with clear and direct results (e.g., basic addition or subtraction)* ***Secondary indicator**: Very low volume of arithmetical operations (e.g., simple daily transactions, counting change or adding up small numbers)*	***Primary indicator**: Simple calculations; jobs often involve multi-step calculations involving more than one arithmetical operation (e.g., adding and subtracting multiple numbers, basic multiplication or division of whole numbers)* ***Secondary indicator**: Low volume of arithmetical operations (e.g., daily budgeting, simple invoicing, basic inventory counts)*	***Primary indicator**: Moderate complexity of calculations; jobs often involve calculations that require an understanding of fractions and decimals, often involving multiple steps (e.g., converting between fractions and decimals, calculating percentages, basic operations with fractions)* ***Secondary indicator**: Moderate volume of arithmetical operations (e.g., processing sales transactions, managing small-scale financial records)*	***Primary indicator**: Complex calculations; jobs often involve calculations with a series of arithmetical operations that require a deep understanding of arithmetic concepts (e.g., completing multi-step calculations where the order of operations may be unclear, combining various arithmetic operations in a sequence)* ***Secondary indicator**: High volume of arithmetical operations (e.g., financial analysis, large-scale inventory management, detailed cost estimations)*	***Primary indicator**: Very complex calculations; jobs often involve calculations that require advanced mathematical understanding and the application of complex arithmetic principles (e.g., completing calculations with no clear order of operations, that include several brackets, fractions or decimals)* ***Secondary indicator**: Very high volume of arithmetical operations (e.g., advanced financial modeling, high-frequency trading calculations, large-scale data analysis)*
Example Tasks	• Compile, record, and code results or data from interview or survey (14110.01) • Set specifications for materials, dimensions, and finishes (53124.06) • Count and verify tickets and seat reservations and record numbers of passengers boarding and disembarking (65210.02) • Maintain travel logs and record cash and credit transactions (75200.01) • Record manufacturing information such as quantity, size and type of goods produced (94103.02)	• Collect, count, and disburse money, do basic bookkeeping, and complete banking transactions (14100.01) • Inspect construction of buildings, bridges, dams, highways and other types of building and engineering construction for conformance to drawings, specifications, building codes or other applicable ordinances (22233.00) • Measure and record individuals' bodily proportions, weight and body mass index (54100.02) • Calculate, write and record orders for merchandise or enter orders into computers (65109.02) • May estimate material required (73113.00)	• Leverage the organization's buying power to optimize costs (12102.00) • Conduct, supervise and participate in forest inventory cruises, surveys and field measurements following accepted scientific and operational procedures (22112.00) • Calculate the correct dosage to administer anesthetics, adjuvant drugs, accessory drugs, fluids or blood products as necessary (31303.01) • Estimate amounts and costs of required supplies, such as food and ingredients (62200.01) • Maintain financial and operational records (82030.02)	• Analyse financial data to detect irregularities in areas such as billing trends, financial relationships, and regulatory compliance procedures (11109.02) • Evaluate statistical data and compute accurate reports regarding the feasibility and efficiency of municipal hydroelectric projects (21102.01) • Operate analog or digital airborne remote sensing equipment such as survey film or digital cameras, laser or radar sensors and scanners to prepare images, data and graphic reports, maps and charts from airborne or satellite data (22214.03) • Analyse data, and compile and interpret statistics on social issues and policy areas (41403.01) • Prepare production reports for review by senior management (80010.00)	• Calculate and analyse financial risks to prepare financial forecasts and recommendations (11101.01) • Analyse and interpret statistical data and construct probability tables to identify significant founding, and advise elected representatives on major policy matters (21210.02) • Prepare cost, expenditure statements and forecasts of the costs of materials, labours and equipment of business projects at regular intervals (22303.00) • Formulate new drug products developed by medical researchers (31120.02) • Direct and advise economists and other professional staff who conduct economic research, prepare reports or administer programs in areas of government activity such as taxation, international trade, labour, transportation or agriculture (40011.00)
Example Occupations	• Survey interviewers (14110.01) • Instrument makers (53124.06) • Ship and train service attendants (65210.02) • Taxi and limousine drivers (75200.01) • Clay products forming and finishing machine operators (94103.02)	• General office support workers (14100.01) • Construction inspectors (22233.00) • Fitness appraisers (54100.02) • Door-to-door salespersons and street vendors (65109.02) • Floor covering installers (73113.00)	• Procurement and purchasing agents and officers (12102.00) • Forestry technologists and technicians (22112.00) • Physician Assistants (31303.01) • Head Chefs (62200.01) • Farm supervisors (82030.02)	• Financial investigators (11109.02) • Geoscientists (21102.01) • Aerial survey and remote sensing technologists and technicians (22214.03) • Social policy researchers (41403.01) • Managers in natural resources production and fishing (80010.00)	• Financial analysts (11101.01) • Statisticians (21210.02) • Construction estimators (22303.00) • Industrial pharmacists (31120.02) • Government managers - economic analysis, policy development and program administration (40011.00)

CANADIAN RATING GUIDE (CRG) FOR ABILITIES – SAMPLE – SEPTEMBER 26, 2024

Verbal Ability

Verbal Ability: The ability to understand the meaning, precise use, associated ideas, and relationships of spoken words; and to use them in the proper context when presenting information or ideas					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
General Common Elements *based on the following indicators:* 1. *Vocabulary complexity* 2. *Complexity of sentence structure*	***Primary indicator**: Very simple vocabulary; jobs commonly use everyday words (e.g., write, computer, book)* ***Secondary indicator**: Very simple sentence structure including single independent clause and explicit information (e.g., warning labels, enumeration of steps within a process)*	***Primary indicator**: Simple vocabulary; jobs commonly use words that are specific to work environments and may require some on-the-job training to understand (e.g., invoice, schedule, report, meeting, client)* ***Secondary indicator**: Simple sentence structure including minimal context but require basic inferences that are straightforward (e.g., short, simple paragraphs with basic details)*	***Primary indicator**: Moderately complex vocabulary; jobs commonly use words or terms that are specific to certain industries or occupations and require some level of expertise or familiarity in the field (e.g., budgeting, inventory management, technical specifications, compliance, workflow)* ***Secondary indicator**: Moderately complex sentence structure including multiple clauses providing some background information, which requires moderate inferences (e.g., connected ideas and information presented in moderate detail)*	***Primary indicator**: Complex vocabulary; jobs commonly use terms that are highly specific to a particular field and requires significant training or education to understand (e.g., algorithm, fiscal policy, structural engineering)* ***Secondary indicator**: Complex sentence structure including detailed context, in-depth background information, which requires complex inferences (e.g., complex and detailed written materials requiring an understanding of subtleties)*	***Primary indicator**: Very complex vocabulary; jobs commonly use terms that are very specialized often understood only by experts in those fields (e.g., quantum physics, synaptic plasticity, macroeconomic stabilization) or including figures of speech used in creative writing (e.g., metaphor, hyperbole, paradox)* ***Secondary indicator**: Very complex sentence structure including high level of details and specific context, highly complex inferences and abstract reasoning (e.g., abstract and technical concepts, very subtle distinctions, and complex arguments)*
Example Tasks	• Report data entry errors to supervisors (14111.00) • Pose as directed by artists, photographers and videographers (55109.03) • Receive and store supplies according to instructions (65201.04) • Install carpet on some floors using adhesive, following customer requirements (73113.00) • Steer vessels and operate navigational instruments as directed by captain or fishing master (84121.00)	• Greet people coming into offices and other establishments, direct them to the appropriate contacts or services, provide general information in person and by phone, and may perform clerical duties and maintain front desk security and security access lists (14101.01) • Negotiate with authorities, such as local government officials, to eliminate hazards along transportation routes (43202.03) • Suggest complementary and/or alternative meat or fish products to consumers (65202.00) • Advise clients on how to prevent pest infestation (73202.00) • Confer with other workers to discuss issues, such as safety, cutting heights, or work needs (84111.00)	• Negotiate contracts with service providers and suppliers such as hotels, convention centers, and speakers (12103.00) • Consult with clients, vendors, personnel in other departments, or construction foremen to discuss and formulate estimates and resolve issues (22303.00) • Interview patients to document symptoms and health histories (32209.01) • Counsel individuals or groups concerning their spiritual, emotional, or personal needs (42204.00) • Describe points of interest, answer questions and supply information (64320.01)	• Confer with municipal, provincial and federal authorities, civic leaders, social scientists, lawyers, land developers, the public and special interest groups to formulate and develop land use or community plans (21202.00) • Provide instructions to patients or family members concerning diagnoses or treatment plans (31303.04) • Testify regarding decisions at immigration appeals or in federal court (43203.02) • Supervise and coordinate the work of camera, lighting, design, and sound crew members (51120.07) • Call on policyholders to deliver and explain policy, to analyze insurance program and suggest additions or changes, or to change beneficiaries (63100.00)	• Confer with board members, organization officials, or staff members to discuss issues, coordinate activities, or resolve problems (00013.00) • Conduct training or in-services to educate clinicians and other personnel on proper use of equipment (21399.03) • Teach or train medical staff regarding preventive medicine issues (31100.11) • Initiate, facilitate, and moderate classroom discussions (41200.00) • Study the origin, structure and development of languages and apply linguistic theory to problems in teaching, translation and communications (41409.05)
Example Occupations	• Data entry clerks (14111.00) • Fashion Models (55109.03) • Dishwashers (65201.04) • Floor covering installers (73113.00) • Fishing vessel deckhands (84121.00)	• Receptionists (14101.01) • Commercial transport inspectors (43202.03) • Meat cutters and fishmongers - retail and wholesale (65202.00) • Pest controllers and fumigators (73202.00) • Silviculture and forestry workers (84111.00)	• Conference and event planners (12103.00) • Construction estimators (22303.00) • Herbalists (32209.01) • Religion workers (42204.00) • Tour guides (64320.01)	• Urban and land use planners (21202.00) • Orthoptists (31303.04) • Immigration officers (43203.02) • Directors of photography (51120.07) • Insurance agents and brokers (63100.00)	• Senior managers - health, education, social and community services and membership organizations (00013.00) • Engineering physicists and engineering scientists (21399.03) • Preventive medicine physicians (31100.11) • University professors and lecturers (41200.00) • Linguists (41409.05)

CANADIAN RATING GUIDE (CRG) FOR SKILLS – SAMPLE – SEPTEMBER 26, 2024

This document includes a table with the indicators used to measure descriptors in the Skills category, along with a sample of CRG for three descriptors: Active Listening, Writing and Problem solving.

SKILLS				
Similarity Group	**Descriptor**	**Definition**	**1st Indicator**	**2nd Indicator**
FOUNDATIONAL SKILLS				
Verbal Skills	Active Listening	The capability to give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times	Complexity of information verbally exchanged	Duration of dialogue
	Oral Comprehension	The capability to listen to and understand information and ideas presented through spoken words and sentences	Complexity of information to listen to and understand	Quantity of information to listen to and understand
	Oral Expression	The capability to talk to others to convey information effectively	Complexity of information to communicate orally	Duration of speech
Reading and Writing Skills	Reading Comprehension	The capability to understand written information presented through words, sentences, paragraphs, symbols, and images in work-related documents	Complexity of information included in work-related documents	Quantity of written content
	Writing	The capability to communicate in writing by using written words, sentences, paragraphs, symbols, and images and adapted for the needs of the audience	Complexity of information to be written	Quantity of information to write
Mathematical	Digital Literacy	The capability to understand and use digital devices and tools to obtain, exchange, create or process digital information in a secure manner	Complexity of tasks using digital tools	Quantity of digital information to create or process
	Numeracy	The capability to understand, use and report numbers and other mathematical information presented through words, numbers, symbols, and graphics	Complexity of application of mathematical concepts and principles	Interpretation of mathematical information
ANALYTICAL SKILLS				
Process Analysis Skills	Critical Thinking	The capability to use logic and reasoning to question, discern, interpret and analyze various types of information to form an evidence-based conclusion or judgment	Complexity of information to discern, interpret and analyse	Quantity of information to discern, interpret and analyse
	Decision Making	The capability to analyze information among a set of alternatives, to evaluate potential outcome and choose the most appropriate solutions to achieve a predetermined objective	Complexity of situations	Quantity of information affecting decision
	Learning and Teaching Strategies	The capability to select and use training/instructional methods and procedures appropriate for the situation when learning or teaching new things	Complexity of information to learn or teach	Complexity of methods and procedures used to learn or teach
Operations and Systems Analysis Skills	Evaluation	The capability to systematically assess products, services or processes using measurable indicators with the goal of ensuring or improving performance	Complexity of products, services or processes to evaluate	Complexity of indicators used in evaluation
	Problem Solving	The capability to identify problems and review related information to develop solutions or feasible options to achieve the desired end state	Complexity of problems to solve	Number of factors that can affect the outcome
	Systems Analysis	The capability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes	Complexity of systems to analyse	Number of factors that can affect the outcome
TECHNICAL SKILLS				
Technical Skills	Digital Production	The capacity to design, develop, adapt, or integrate hardware, software applications, electronic devices or digital technologies while adhering to cybersecurity standards	Complexity of digital technologies to design, develop, adapt, or integrate (e.g., hardware, software applications, electronic devices)	Degree of involvement in digital production
	Equipment and Tool Selection	The capability to choose between two or more types of tools, equipment or machinery to perform a job	Variety of tools, equipment or machinery available for tasks	Complexity of the tasks requiring tools, equipment or machinery
	Operation and Control	The capability to maneuver and control operations of equipment, machines, vehicles or systems	Complexity of equipment, machines, vehicles, or systems to be maneuvered or controlled	Precision required when controlling equipment, machines, vehicles, or systems

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Similarity Group	Descriptor	Definition	1st Indicator	2nd Indicator
	Operation Monitoring of Machinery and Equipment	The capability to watch gauges, dials, digital displays or other indicators to ensure a machine or piece of equipment is working according to specifications	Complexity of machines or pieces of equipment to be monitored	Variety of equipment, machines and systems to monitor
	Preventative Maintenance	The capability to perform maintenance on equipment, devices, building or machinery to keep them in functional and to prevent damage or failures	Complexity of maintenance operations	Extent of preventative maintenance
	Product Design	The capacity to design and develop layouts for the construction of objects, equipment, machinery, structures, or engineering systems (excluding software and hardware)	Complexity of objects, equipment, machinery, structures, or engineering systems to be designed and developed	Complexity of design
	Quality Control Testing	The capability to conduct tests or inspections of prototypes, products, services, or processes to ensure their quality	Complexity of tests or inspections to perform	Complexity of prototypes, products, services, or processes
	Repairing	The capability to replace, restore or adjust defective or deficient components in equipment, machines, and technical systems and test for function, appearance, operation and safety	Complexity of equipment, machines, or technical systems to repair	Number of steps required to repair
	Setting Up	The capability to set up, adjust, install and assemble equipment, machines, parts or to prepare them for their functioning and use	Complexity of equipment or machines	Variety of equipment and machines
	Troubleshooting	The capability to determine causes of operating errors in equipment, machinery, or technological systems and decide how to resolve the issues	Complexity of equipment, machinery, or technological systems	Number of steps required to troubleshoot
RESOURCE MANAGEMENT SKILLS				
Resource Management Skills	Management of Financial Resources	The capability to plan, organize, direct, control or monitor financial resources and activities and account for the use of theses resources to ensure their utilization are conform to the objectives and purposes	Degree of accountability for managing expenditures	Complexity of operations related to the management of financial resources
	Management of Material Resources	The capability to plan and manage the purchase, inventory, warehousing, transportation, or distribution of products or materials and their use	Degree of accountability for managing material resources	Complexity of operations required for the management of the material resources
	Management of Personnel Resources	The capability to recruit, train, motivate, develop and direct employees, identify the best person for the tasks to be performed and establish their work objectives in relation to the objectives of the organization	Degree of accountability for managing personnel resources	Variety of personnel to be recruited, trained, motivated, developed and/or directed
Planning Skills	Time Management	The capacity to manage one's own time and the time of others	Complexity of tasks required to be managed	Number of tasks or activities required to be managed
Monitoring Skills	Monitoring	The capability to monitor and assess the performance of yourself, other individuals or the organization to make improvements or take corrective action	Complexity of processes or outcomes to monitor	Variety of elements to monitor
INTERPERSONAL SKILLS				
Interpersonal Skills	Coordinating	The capability to organize people or groups by adjusting activities in relation to others' activities so that they work effectively as a whole	Complexity of activities to coordinate	Number of people to coordinate
	Instructing	The capability to teach others knowledge, or how to do something	Complexity of topic to teach	Variety of methods used for instructing
	Negotiating	The capability to participate in, or facilitate communication between parties, in order to resolve differences, and reach a mutually acceptable or viable agreement	Complexity of situations	Number of elements to negotiate
	Persuading	The capability to convince others to change their minds, beliefs, intentions or behaviours	Complexity of situations	Degree of effort needed to persuade
	Social Perceptiveness	The capability to be aware of others' reactions, unspoken communication, body language cues and feelings and discern the reasons behind their behaviours	Degree of sensitivity to others	Complexity of situations requiring interaction

CANADIAN RATING GUIDE (CRG) FOR SKILLS – SAMPLE – SEPTEMBER 26, 2024

Active Listening

Active Listening: The capability to give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times					
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
General Common Elements based on the following indicators: *1. Complexity of information verbally exchanged* *2. Duration of dialogue*	*Primary Indicator: Very simple information verbally exchanged; dialogues commonly involve straightforward information and requires minimal interpretation or inference* *Secondary Indicator: Very short duration of dialogue with others; dialogues involve usually basic exchanges, in which no extended discussion and no exploration of topics are required*	*Primary Indicator: Simple information verbally exchanged; dialogues commonly involve simple opinions or feelings, requiring a slight degree of empathy or understanding beyond basic facts* *Secondary Indicator: Short duration of dialogue with others; dialogues may require occasionally asking questions or providing feedback, but not seeking deep understanding or insight*	*Primary Indicator: Moderate complexity of information verbally exchanged; dialogues commonly involve explanations, narratives, or personal experiences and require active engagement and understanding from the listener* *Secondary Indicator: Moderate duration of dialogue with others; dialogues may require actively asking questions to clarify understanding and expressing empathy or related experiences to deepen engagement*	*Primary Indicator: Complex information verbally exchanged; dialogues commonly involve multifaceted information and require understanding of nuanced points, unstated implications, and synthesize information from different parts of the conversation* *Secondary Indicator: Long duration of dialogue with others; dialogue may require dedicated time to explore topics in depth, asking insightful questions that encourage the speaker to expand on their thoughts, and summarizing information frequently to ensure mutual understanding*	*Primary Indicator: Very complex information verbally exchanged; dialogues commonly involve abstract concepts, emotional depths or nuances, highly specialized topics, and require a high degree of empathy, critical thinking, and inferential reasoning to fully engage with the speaker's perspective* *Secondary Indicator: Very long duration of dialogue with others; dialogues may evolve over multiple sessions and require a high level of engagement, deep empathy, insightful questioning, and the ability to connect disparate ideas to enrich the dialogue*
Example Tasks	• Respond to and make radio dispatch calls regarding parking violations and complaints (43202.06) • Listen to directions on the poses to adopt during filming, or photo sessions (55109.03) • Confer with clients to take orders (65201.01) • Listen to oral instructions to load, unload and move products and materials (75101.01) • Confer with supervisor to understand what type of repair to be done to furniture (94210.03)	• Greet persons entering establishment, determine nature and purpose of visit, and direct or escort them to specific destinations (14101.01) • Communicate with customers for classified advertising and calculate advertising costs (14301.01) • Confer with clients, editors, writers, art directors, and other interested parties regarding the nature and content of artwork to be produced (53122.01) • Listen carefully to patrons regarding desired services and haircut styles (63210.02) • Communicate with dispatchers by radio, telephone, or computer to exchange information and receive requests for passenger service (75200.02)	• Answer clients' questions about the purposes and details of financial plans and strategies (11102.00) • Confer with clients about their medical histories and problems with stress or pain to determine the type of treatment (32201.00) • Conduct surveys and collect data, using as interviews and focus groups (41403.01) • Provide care and companionship for individuals and families during periods of incapacitation, convalescence or family disruption (44101.00) • Consult with customers to determine objectives and requirements for events, such as meetings, conferences, and conventions (64201.02)	• Consult with boards of directors and senior managers to maintain and establish standards for the provision of health care services (30010.00) • Communicate with referring physician and other health care professionals regarding clients' problems, needs and progress (31202.00) • Interview persons in connection with criminal incidents, including victims, witnesses and suspects (41310.01) • Communicate with individuals with disabilities and their families on the use of rehabilitative techniques, prosthetic devices, wheelchairs and other equipment designed to maximize clients' independence and potential (42203.00) • Gather information and develop perspectives about news subjects notably through interviews (51113.00)	• Examine patient and give full attention to what they say to identify their diseases and to provide the right advice (31102.00) • Identify psychological, emotional, or behavioral issues and diagnose disorders, using information obtained from interviews (31200.00) • Preside over hearings and listen to allegations made by plaintiffs to determine whether the evidence supports the charges (41100.00) • Consult with and advise individuals such as administrators, social workers, and legislators regarding social issues and policies, as well as the implications of research findings (41409.08) • Provide counsel and therapy to assist clients in developing skills to deal with and resolve their social and personal problems (41300.00)
Example Occupations	• Parking control officers (43202.06) • Fashion Models (55109.03) • Food counter attendants and food preparers (65201.01) • Material handlers (manual) (75101.01) • Furniture refinishers (94210.03)	• Receptionists (14101.01) • Classified advertising clerks (14301.01) • Painters (53122.01) • Barbers (63210.02) • Chauffeurs (75200.02)	• Financial advisors (11102.00) • Massage therapists (32201.00) • Social survey researchers (41403.06) • Home support workers, caregivers and related occupations (44101.00) • Wedding consultants (64201.02)	• Managers in health care (30010.00) • Physiotherapists (31202.00) • Police investigators (41310.01) • Instructors of persons with disabilities (42203.00) • Journalists (51113.00)	• General practitioners and family physicians (31102.00) • Psychologists (31200.00) • Judges (41100.00) • Sociologists (41409.08) • Social workers (41300.00)

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Writing

Writing: The capability to communicate in writing by using written words, sentences, paragraphs, symbols, and images and adapted for the needs of the audience					
	Level 1	Level 2	Level 3	Level 4	Level 5
General Common Elements based on the following indicators: *1. Complexity of information to be written* *2. Quantity of information to write*	*Primary Indicator: Very simple information to be written, often limited to basic instructions, with minimal detail required for understanding (e.g., completing order receipts in a retail setting)* *Secondary Indicator: Very small number of words is needed, typically just a few sentences or bullet points (e.g., a list of supplies needed for a project or a brief status updates in a team meeting)*	*Primary Indicator: Simple information to be written usually taking the form of clear instructions or descriptions, requiring basic organization and some elaboration (e.g., writing clear instructions for assembling a product or preparing a summary of meeting notes for distribution)* *Secondary Indicator: Small number of words is needed, typically ranging from a few sentences to few paragraphs (e.g., a short article for an internal newsletter or a brief report on weekly sales figures)*	*Primary Indicator: Moderately complex information to be written that typically encompasses detailed information that may involve some analysis or explanation, requiring clear structure and logical flow (e.g., compiling a presentation that analyzes company performance)* *Secondary Indicator: Significant quantity of words is required, usually consisting of multiple pages (e.g., detailed progress report for a project or multiple paragraphs summarizing research findings)*	*Primary Indicator: Complex information to be written that often includes thorough analysis, well-supported arguments, and consideration of various viewpoints or implications (e.g., composing a technical report and propose actionable steps for improvement)* *Secondary Indicator: Large quantity of words is necessary, often resulting in lengthy documents, such as reports or articles (e.g., a multi-page report that assesses risk factors in a project, or a full curriculum for an educational program)*	*Primary Indicator: Very complex information to be written, that commonly includes in-depth analysis, critical reasoning, and the integration of multiple perspectives or data sources (e.g., writing a detailed research proposal for funding that requires extensive literature review and methodology)* *Secondary Indicator: Very large quantity of words is necessary, often comprising several pages or comprehensive documents that articulate nuanced arguments and detailed explanations (e.g., a multi-chapter book on a specialized subject or a lengthy policy analysis report)*
Example Tasks	• Write warnings and citations for illegally parked vehicles (43202.06) • Write down items on menu, such as daily special meals (63200.00) • Record fishing progress, crew activities, weather and sea conditions on ship's log (83120.00) • Maintain shift log of production and other data (94140.01)	• Perform clerical activities, such as word processing (14300.00) • Prepare work orders and instructions for grinding lenses and fabricating eyeglasses (32100.00) • Compose explanatory summaries of contents of books and other reference materials (52100.02) • Prepare sales slips or sales contracts (64100.01) • Complete reports and record information on product inspection (94219.02)	• Prepare underwriting reports and update insurance forms when necessary (12202.00) • Conduct field research and surveys to collect data on water, soil, and plant and animal populations, and prepare reports (22110.01) • Prepare subject material for presentation to students according to an approved curriculum (41220.00) • Plan and formulate flight activities and test schedules and prepare flight evaluation reports (72600.01)	• Prepare reports, exhibits, and other supporting schedules that detail an institution's safety and soundness, compliance with laws and regulations, and recommended solutions to questionable financial conditions (11109.04) • Prepare government or organizational reports of birth, death, and disease statistics, or medical status of children (31100.03) • Produce written documents such as proposals based on demographic, social and economic research, analysis and the evaluation of pilot projects (41403.01) • Write, review and update manuals, user guides and other documents to provide instruction and to explain clearly and concisely the installation, operation and maintenance of software and electronic, mechanical and other equipment (51112.00)	• Write interesting and effective press releases, prepare information for media kits, and develop and maintain company internet or intranet web pages (10022.03) • Write research proposals to receive funding (21100.01) • Prepare preventive health reports, including problem descriptions, analyses, alternative solutions, and recommendations (31100.11) • Write decisions on cases detailing the logic of reasoning and the parts of law involved in the dispute (41100.00) • Conceive and write novels, plays, scripts, poetry and other material for publication or presentation (51111.01)
Example Occupations	• Parking control officers (43202.06) • Cooks (63200.00) • Fishing masters and officers (83120.00) • Process control operators, food and beverage processing (94140.01)	• Library assistants and clerks (14300.00) • Opticians (32100.00) • Public archive technicians (52100.02) • Retail salespersons (64100.01) • Product inspectors (94219.02)	• Insurance underwriters (12202.00) • Biological technologists (22110.01) • Secondary school teachers (41220.00) • Air pilots (72600.01)	• Trust officers (11109.04) • Public and environmental health and safety professionals (21120.00) • Pediatricians, general (31100.03) • Social policy researchers (41403.01) • Technical writers (51112.00)	• Physicists (21100.01) • Preventive medicine physicians (31100.11) • Judges (41100.00) • Novelists, playwrights, script writers, poets and other creative writers (51111.01)

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Problem Solving

Problem Solving: The capability to identify problems and review related information to develop solutions or feasible options to achieve the desired end state					
	Level 1	Level 2	Level 3	Level 4	Level 5
General Common Elements based on the following indicators: *1. Complexity of problems to solve* *2. Number of factors that can affect the outcome*	*Primary Indicator: Very simple problems to solve; problems involve clear and direct solutions (e.g., basic arithmetic problems, or simple decision-making scenarios)* *Secondary Indicator: Very small number of factors that can affect the outcome; problems commonly involve only one or two factors that are simple and linear*	*Primary Indicator: Simple problems to solve; problems require more than basic decision-making (e.g., organizing work to meet expectations, or resolving common workplace misunderstandings)* *Secondary Indicator: Small number of factors that can affect the outcome; problems are relatively contained and identifiable*	*Primary Indicator: Moderate complexity of problems to solve; problems involve multiple steps or stages for resolution, and require some analytical thinking (e.g., resolving a small-scale issue, or managing a small team project)* *Secondary Indicator: Moderate number of factors that can affect the outcome; problems commonly involve multiple factors that may be unpredictable*	*Primary Indicator: Complex problems to solve; problems might require an in-depth understanding of a specific area or the ability to integrate knowledge from different domains (e.g., developing a new program or business process, or solving a cross-discipline problem)* *Secondary Indicator: Large number of factors that can affect the outcome which require to evaluate their implications and consider potential developments over time*	*Primary Indicator: Very complex problems to solve; problems are possibly unprecedented, require novel solutions, and demand extensive knowledge, creativity, and the ability to think abstractly (e.g., leading a large-scale organizational change, or pioneering in a field of study)* *Secondary Indicator: Very large number of factors that can affect the outcome; problems commonly are unpredictable or dynamic elements that complicate the problem-solving process, and requiring predicting the evolution of the problem over time*
Example Tasks	• Compare merchandise invoices to items actually received to ensure that shipments are correct (14403.02) • Take actions to stop disruption of library activities by angry customers (52100.01) • Answer questions regarding food and beverages and make recommendations (65200.00) • Inspect and adjust crane mechanisms or lifting accessories to prevent malfunctions or damage (72500.00) • Affix seals or tags to approved items and return defective products for repair or recycle (94219.02)	• Review information about transfers of property to ensure its accuracy and making corrections as necessary (12203.03) • Perform preventative dental procedures such as teeth cleaning, scaling, gum stimulation and fluoride and sealant applications (32111.01) • Administer, in emergency situations, first aid to injured or ill individuals within the scope of their competencies (33102.00) • Tend to the emotional well-being of children and support their social development (44100.01) • Check the appearance of costumes on stage or under lights to determine whether desired effects are being achieved (53111.06)	• Take emergency actions, such as closing production facilities, if product safety is compromised (22111.04) • Estimate patients' due dates and re-evaluate as necessary based on examination results (31303.02) • Control and extinguish fires using manual and power equipment, such as axes, water hoses, aerial ladders and hydraulic equipment and various firefighting chemicals (42101.00) • Identify and resolve conflicts related to the meanings of words, concepts, practices, or behaviors (51114.03) • Resolve water leaking issues, modify, clean, or maintain pipe systems, units, fittings, or related machines (72300.00)	• Plan and direct woodlands harvesting, reforestation, silviculture and fire prevention and fire suppression programs, road building, wildlife management, environmental protection and insect and vegetation control programs (21111.00) • Engaged in research activities related to nursing, as self-employed or as employed by hospitals, public and private organizations and governments (31301.05) • Plan and conduct programs to resolve social problems, prevent substance abuse, or improve community health and counseling services (41300.00) • Resolved airplane potential issues by various means, such as informing pilots about nearby planes or potentially hazardous conditions, providing flight path changes or directions to emergency landing fields (72601.01) • Plan and implement changes to machinery and equipment, production systems and methods of work (90010.00)	• Allocate material, human and financial resources to implement organizational policies and programs (00013.00) • Conduct research to develop new chemical formulations and processes and devise new technical applications of industrial chemicals and compounds (21101.00) • Develop new technologies, medical diagnostic and clinical instrumentations, equipment and devices to address unmet medical needs (21399.02) • Diagnose presence and stage of diseases, identify rare conditions and distinguish between similar presentations (31100.14) • Interpret and enforce rules of procedure or establish new rules to settle situations where there are no procedures already established by law (41100.00)
Example Occupations	• Inventory control workers (14403.02) • Library Technicians (52100.01) • Food and beverage servers (65200.00) • Crane operators (72500.00) • Product inspectors (94219.02)	• Appraisers (12203.03) • Dental hygienists (32111.01) • Nurse aides, orderlies and patient service associates (33102.00) • Home childcare providers (44100.01) • Dressers (53111.06)	• Meat inspectors (22111.04) • Midwives (31303.02) • Firefighters (42101.00) • Interpreters (51114.03) • Plumbers (72300.00)	• Forestry professionals (21111.00) • Nursing researchers and consultants (31301.05) • Social workers (41300.00) • Air traffic controllers (72601.01) • Manufacturing managers (90010.00)	• Senior managers - health, education, social and community services and membership organizations (00013.00) • Chemists (21101.00) • Biomedical engineers (21399.02) • Specialists in laboratory medicine, including pathologists (31100.14) • Judges (41100.00)

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