

## Attachment 1: Bloom's Taxonomy<sup>1</sup> for Learning Outcomes (adapted)

Bloom's levels of educational learning provide a framework to consider what applicants know and where the educational effort should be targeted in order to further promote additional and more sophisticated learning. For these standards, Bloom's hierarchical taxonomy has been adapted as given below:

Category	Keywords
<p><b>1. Knowledge:</b> remembering information <i>(The learner first must be made aware of the situation.)</i></p>	<p>Define label state list match <i>(Rote memory)</i></p>
<p><b>2. Comprehension:</b> explaining the meaning of information <i>(The learner must then comprehend the value of information.)</i></p>	<p>Describe identify paraphrase summarize estimate <i>(Translate to your words)</i></p>
<p><b>3. Application:</b> using abstracts in concrete situations <i>(The learner must be able to consider what they have learned in one situation and use it in another different situation.)</i></p>	<p>Determine chart implement prepare solve use develop <i>(Apply general principle)</i></p>
<p><b>4. Analysis:</b> breaking down a whole into component parts <i>(The learner acquires additional information about the situation, and begins to look at the different pieces of information that comprise the whole story.)</i></p>	<p>Point out differentiate distinguish discriminate compare <i>(Break down into parts)</i></p>
<p><b>5. Synthesis:</b> putting parts together to form a new and integrated whole <i>(The learner then develops the skills to assemble that information in new ways, rather than simply reflecting back what they have learned.)</i></p>	<p>Create design plan organize generate write <i>(Create a whole from parts)</i></p>
<p><b>6. Evaluation:</b> making judgements about the merits of ideals, materials or phenomena <i>(The learner is able to judge the information and make decisions for him/herself about its (good or bad) value based on criteria.)</i></p>	<p>Appraise critique evaluate judge weigh select <i>(Judge according to standards)</i></p>

1. Bloom B.S. 1956. *Taxonomy of educational objectives: the classification of educational goals. Handbook 1: Cognitive Domain*. Longman, White Plains, NY.

## Attachment 2: Definition of Verbs used in Certification Standards

The action verbs<sup>2</sup> given below are as found in the *Certification Standards for the Profession of Forestry in Canada (2017)* of the Forest Professional Regulators of Canada (FPRC) as presented in this document.

Bloom's Level and Action Verb	Action Verb Definition
<b>1. Knowledge</b>	No verbs in this level.
<b>2. Comprehension</b>	
Describe	Give an account of (something), in words or by representation
Discuss	Talk or write about (a topic) in detail, taking into account different issues or ideas
Explain	Make an idea or situation clear by describing it or by revealing relevant facts; give the reason for or cause of (something); show the logical development or relationship of (something)
Identify	Establish or indicate (what something is) to a high degree of certainty
<b>3. Application</b>	
Apply	Put into operation or effect; put to use for some practical purpose
Articulate	Express an idea fluently and coherently
Communicate	Convey ideas to, or evoke understanding in others; convey knowledge of, or information about (something); share or exchange information
Employ	Make use of (something); hold or deploy as a means of accomplishing or achieving (something) (see also "use")
Use	Act or practice of employing (something); take, hold or deploy as a means of accomplishing or achieving (something) (see also "employ")
<b>4. Analysis</b>	
Analyse	Examine methodically and in detail in order to explain and interpret (something); discover or reveal (something) through close examination; study or determine the nature and relationship of the parts of (something)
Interpret	Explain the meaning of (something); understand something as having a particular meaning; present in understandable terms
<b>5. Synthesis</b>	
Design	Conceive of and produce a plan or drawing of (something) before it is made; do or plan (something) with a specific purpose in mind; devise for a specific function or end
Develop	Create or produce by deliberate effort; make available or usable; set forth or make clear by degrees or in detail; convert to a new purpose by making other use of resources
<b>6. Evaluation</b>	No verbs in this level.

2. Jenkins, A. and D. Unwin. 2001. *How to write learning outcomes*.  
<http://www.ncgia.ucsb.edu/education/curricula/giscc/units/format/outcomes.html>