

LEARNING OUTCOMES

ANOTHER LOOK AT *Bloom's Cognitive Taxonomy*

Intended LOs align to learning and assessment tasks

Course Learning Outcomes	create		HIGHER ORDER THINKING
	action verbs: combine, compose, create, design, improve, formulate, hypothesize, invent, synthesize	assessments: portfolio, new product, Capstone/research project, game development, reflection	
	evaluate		
	action verbs: appraise, defend, dispute, critique, prioritize, editorialize, justify, rate, select, verify	assessments: critique, case studies, peer/self assessment, recommendation, report, reflection	
	analyze		
	action verbs: appraise, compare, contrast, differentiate, distinguish, examine, infer, sequence, defend	assessments: charts, plan, review, survey, observation, case studies, trouble-shooting	
Elements of Performance	apply		LOWER ORDER THINKING
	action verbs: classify, demonstrate, calculate, illustrate, solve, practice, modify, restructure	assessments: presentation, model-building, simulation, demonstration, collection, interview	
	examine		
	action verbs: describe, discuss, expand, identify, locate, outline, report, restate, represent, edit	assessments: drawing, paraphrasing, peer teaching, summary, infographs, Tagxedo	
	recall		
	action verbs: define, duplicate, reproduce, list, recall, tell, underline	assessments: definitions, fact charts, lists, worksheets, quizzes, digital story board	

Other taxonomies that may be useful in generating LOs and assessments:

- **Affective Taxonomy** (Krathwohl D.R., 1964) refers to **attitudes, motivations, values of the discipline**
Evidenced in all courses where we set expectations for student engagement such as: displays of equity, effort, inquiry, participation, respect, reflection, valuing of educational context and life-long learning.
» Assessments include: checklist, rating scale, journal, essay, editorial, reflection, debate, case study, peer assessment, project
- **Psychomotor Taxonomy** (Simpson, E.J., 1972, Gronlund, N.E., 1985) refers to **kinesthetic, manual, motor skills**
Evidenced in lab, vocational, clinical, performing arts and specific-equipment training courses.
» Assessments include: checklist, rating scale, demonstration, role play, simulation, troubleshooting, innovating, constructing

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LEARNING OUTCOMES

Affective Taxonomy (Krathwohl, D.R., 1964)

internalizing	
description: Complete integration of info/experience resulting in new attitudes, beliefs, values, and behaviour	action verbs: act, advocate, exemplify, influence, propose, question, solve
organizing	
description: Incorporate new info/experience into existing value systems	action verbs: adapt, combine, compare, formulate, defend, order, relate, synthesize
valuing	
description: Attach value or worth to new info/experience	action verbs: adopt, explain, initiate, justify, propose, show concern for, share, respect
responding	
description: Respond through active participation to new info/experience	action verbs: answer, assist, discuss, help, contribute, recite, tell, write
receiving	
description: Awareness of new info/experiences	action verbs: acknowledge, ask, follow, identify, listen, locate, reply

Psychomotor Taxonomy (Simpson, E.J., 1972, Gronlund, N.E., 1985)

naturalization	
description: Mastering and internalizing skills for automatic high-quality performance	action verbs: compose, construct, create, design, refine, originate, invent
articulation	
description: Integrating well developed skills for adaptations	action verbs: adapt, alter, combine, modify, revise, transfer, troubleshoot
precision	
description: Skills performed quickly, smoothly, accurately with full confidence and proficiency	action verbs: achieve, accomplish, calibrate, excel, master, refine
manipulation	
description: Repeating an action following instruction with some confidence and proficiency	action verbs: assemble, build, complete, execute, operate, perform, use
imitation	
description: Observing, then repeating an action that has been demonstrated	action verbs: copy, follow, mimic, replicated, reproduce, trace

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LEARNING OUTCOMES

LOs in the Ontario College System

Vocational Program Standards/Provincial Vocational Learning Outcomes (Ministry Level)

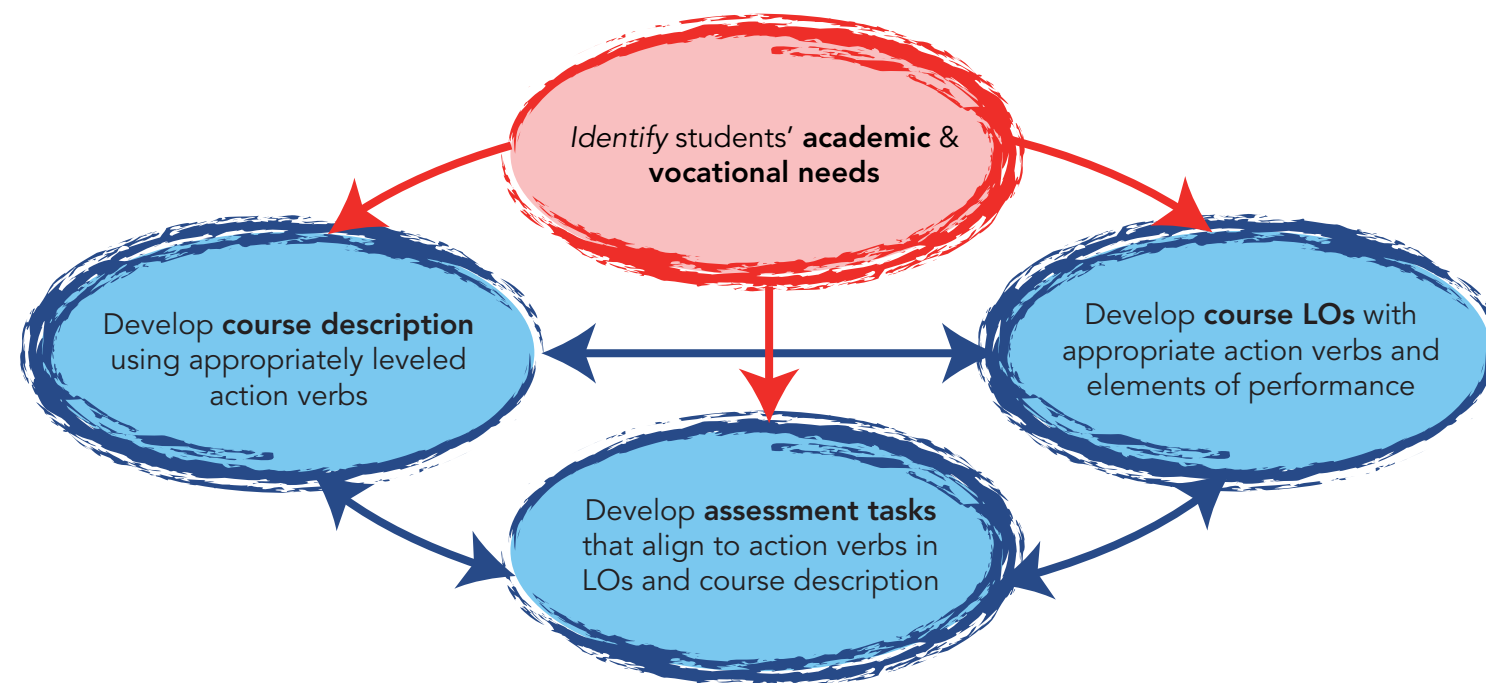
Program Vocational Learning Outcomes (College Level)

Course Learning Outcomes (Department Level)

Lesson Plan Outcomes (Class Level)

Curriculum Alignment Cycle

Quality curriculum stems from a **student-centred approach** to learning, and is based on aligning **course LOs**, **course description** and **assessment tasks**.



Please contact a Centre for Teaching & Learning team member for more information by visiting mohawkcollege.ca/CTL

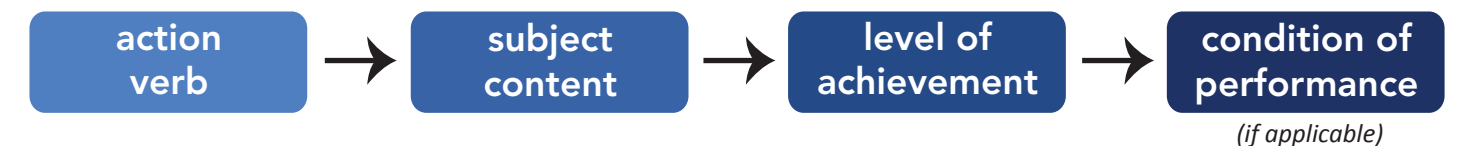
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LEARNING OUTCOMES

A Learning Outcome (LO) is a

- **measurable**, **observable**, and **specific** statement that clearly indicates what work-related knowledge, skills and abilities a student should know and **be able to demonstrate** as a **result** of learning.

Well-written LOs involve the following parts:



For example

Upon successful completion of the course, the student will reliably demonstrate the ability to:

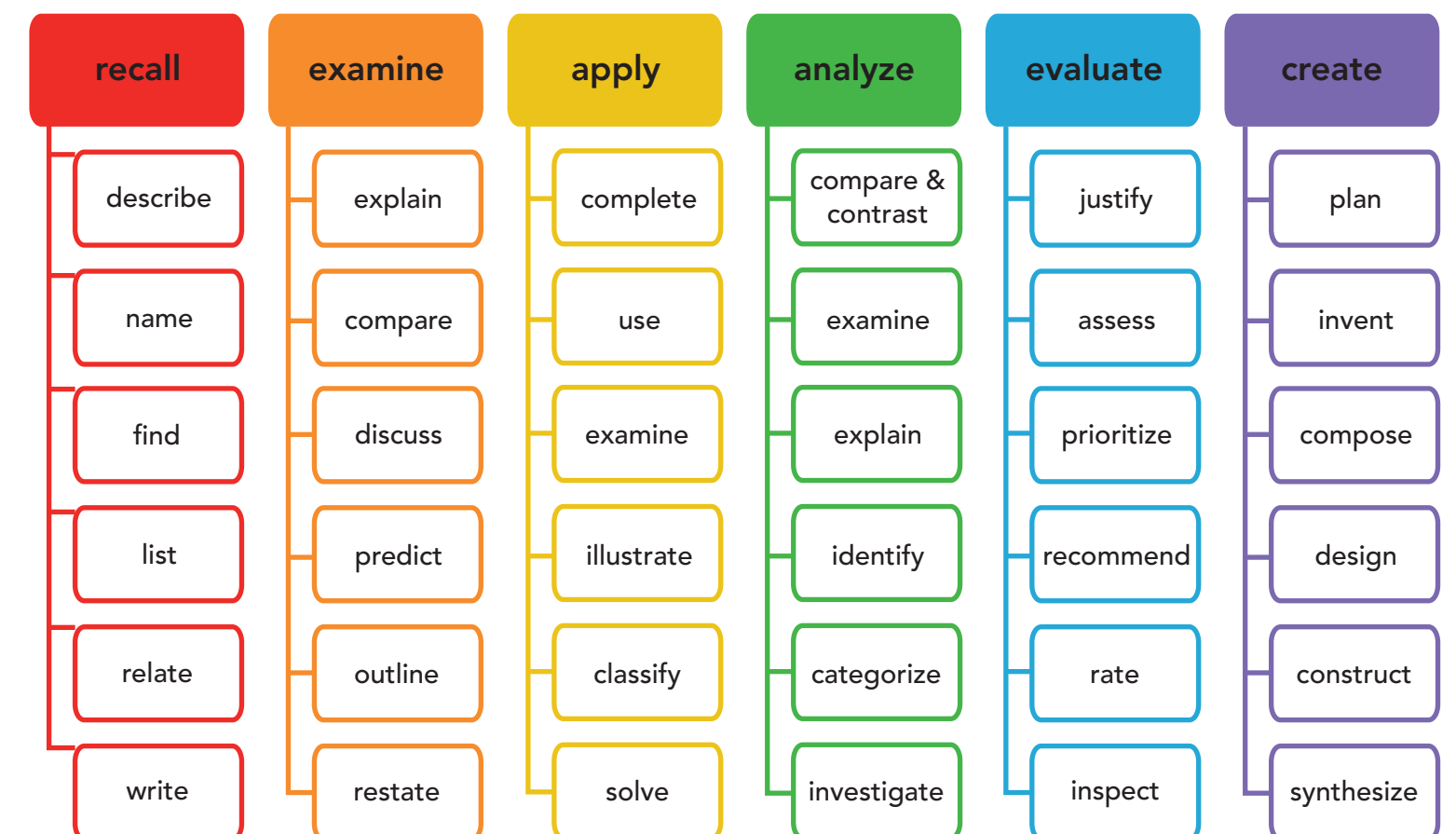
LO1. List areas of consensus and disagreement among publications on global warming.

LO2. Synthesize learning assignments with vocation-specific expectations using reflective enquiry.

Generating LOs using Bloom's Cognitive Taxonomy (adapted 2019)

Lower Order

Higher Order



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