

Supplemental Material 1: The following list was developed by members of the Biology department at Wofford College in response to the question “what do we want our students to know, do, and care about?” as they prepared to engage in reform of their first year curriculum.

Canonical Knowledge (Know)	Skills (Do)	Dispositions (Care About)
Core theories of natural world (e.g., evolution/natural selection)	Manage time effectively and practice effective study skills.	Increased confidence in ability to understand and use science.
Foundational content (e.g., DNA structure/function)	Effectively observe, hypothesize, predict, document, measure, collect data, analyze, interpret, and evaluate.	Greater appreciation & awareness of professional <i>scholarship</i> .
Functional numeracy (orders of magnitude, interpret graphs, statistics, concentrations, molarities, applied mathematics)	Design a good experiment or model and/or use computational methods to test hypotheses.	Motivation (take action, learn more than required, seek justice, etc.).
“Credentialing” of a scientist, the role of peer review process, primary research, etc.	Read and use primary literature appropriately. Paraphrase and cite others' ideas appropriately.	Honesty – Integrity
How new findings remodel accepted interpretations (e.g., <i>Hox</i> genes and phylogenetic relationships)	Think critically (use evidence, evaluate credibility, critique bias in self and others), practice open-minded skepticism.	Responsibility for others welfare/civic engagement.
The power and limitations of science (and scientists). Moral, ethical, economic, historical, & religious norms influence scientific practice. Learn beyond STEM.	Integrate and apply knowledge from other STEM and non-STEM disciplines. Transfer knowledge to novel situations, predict/create/innovate.	Self-reflection and improvement
Complexity and ambiguity are more the norm than fact and proof.	Communicate effectively in oral and written form.	Sense of belonging that is shared with other learners
	Work well in teams and individually.	Committed to institution & teachers
	Make meaning of complex issues in context; recognize role of underlying ethics, morals, and values.	Empathy for diversity of perspectives, backgrounds, etc.
	Utilize multidisciplinary knowledge and skills to investigate complex and ambiguous topics.	