**GE SLO 5.3** Make connections between fundamental, core, key concepts, or big ideas in the natural sciences to describe and explain natural phenomena.

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|  | Initial 1 | Emerging 2 | Developing 3 | Highly Developed 4 |
| **Connecting big ideas**(adapted from University of South Carolina Science rubrics) | Little understanding of relationship of concepts, terms or important ideas to each other or to a science perspective; uses beliefs, applies ideas inaccurately, or uses irrelevant facts to explain scientific phenomena. | Uses basic understanding of concepts, descriptive terms, and important thinkers and ideas from at least one of the sciences to explain contemporary scientific phenomena; recognizes perspectives of other disciplines. | Uses knowledge of theoretical frameworks, concepts, terms, and important thinkers and ideas from two sciences to discuss contemporary scientific phenomena; identifies perspectives of each discipline in explaining a particular process or natural phenomenon. | Uses deep understanding of theoretical frameworks, concepts, terms, and important thinkers and ideas from several science disciplines to explain contemporary scientific phenomena; makes connections between science disciplines and identifies separate contributions of disciplines to understanding/ explaining natural phenomena. |
| **Hypotheses and models**(drawing on CSU Scientific Literacy inventory) | Little understanding of how scientists select among competing working hypotheses to best describe/explain a natural pehnomena. Cannot explain or provide an example of modeling as used in science. | Shows basic understanding of how scientists select among several competing working hypotheses to best describe/explain a natural phenomenon. Can give a basic explanation of modeling as used in science. | Explains how scientists select which among several competing working hypotheses best explains a physical phenomenon. Explain and provide an example of modeling as used in science. | Gives sophisticated explanation of how scientists select which among several competing working hyptheses best explain natural phenomena. Fully explains and gives examples of modeling used in multiple natural sciences. |
| **Scientific ethics**(drawing on CSU Scientific Literacy inventory) | Little understanding of why awareness of ethics becomes increasingly important as a society becomes increasingly advanced in science and technology. | Shows basic understanding of why awareness of ethics becomes increasingly important as a society becomes increasingly advanced in science and technology. | Explains why awareness of ethics becomes increasingly important as a society becomes increasingly advanced in science and technology. | Shows complex understanding of why awareness of ethics becomes increasingly important as a society becomes increasingly advanced in science and technology, and gives illustrative examples. |

(Updated September 2025)