**The Four Spheres**

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| **Big Idea** | **Access Point** | **Emerging** | **Developing** | **Proficient** | **Extending** |

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| The biosphere, geosphere, hydrosphere, and atmosphere are interconnected as matter cycles and energy flows through then | Define the  difference between  biotic and abiotic  components | Identifies that the earth and space are separated by specific layers | Describes how biotic  and abiotic matter and energy cycles within and among each sphere, considers multiple knowledges, represents in a variety of ways | Critically analyzes how humans impact the matter and energy cycles within biotic and abiotic components of ecosystems. | Formulates a physical or mental theoretical model of the natural formation of planetary spheres  Formulates a plan for how humans can reduce their impact on an ecosystem. |
| Conducts experiment collaboratively with others, and records findings in a variety of ways | Defines qualitative and quantitative data  Interprets graphs and diagrams to observe data patterns and relationships | Explains the importance of both types of data for scientific discovery and understanding of our natural world  Critically analyzes data, and the methods used to gather it, for reliability and validity | Defends a stance related to scientific validity of an environmental issue, suggests a course of action, and communicates it effectively using scientific language, conventions, and representations | Proposes an innovative solution to an environmental issue, communicates in creative and powerful ways |
| Describe different perspectives related to sustainability | Identifies that other perspectives exist outside of the western platonic knowledge idea | Describes Indigenous and other perspectives related to sustainability | Makes connections between western and Indigenous perspectives, analyzes reasons for differences | Proposes ways of synthesizing beliefs and practices to address an environmental issue |