Science 7 Interactions Within Ecosytems Unit

Big Idea: We are all connected

Outcome:

IE7.3 Evaluate biogeochemical cycles (water, carbon and nitrogen) as representations of energy flow energy and the cycling of matter through ecosystems

Evaluate 🡪 biogeochemical cycles

Understandings:

 That matter cycles through ecosystems and energy flows through food webs

 That decomposers recycle matter.

That the Scientific method can be used to collect evidence, search for patterns and propose explanations.

That evidence needs to be collected in multiple ways from multiple sources

That removing one thing affects an ecosystem in multiple ways.

That technologies based on science can help us.

Essential questions:

1. Why does matter cycle, while energy flows?
2. How is energy flow represented in a pyramid?
3. How do decomposers recycle matter and how does these impact ecosystems?
4. Why do scientists use the scientific method?
5. What does good scientific study look like?
6. What happens when one thing is removed from an ecosystem?
7. What scientific knowledge has resulted in the development of technology?

Students need to know:

-energy flows

 -matter cycles (carbon, nitrogen and water)

 -strengths and limitations of models

 -how decomposers recycle

 -how to collect information and check for patterns

 -how to do an experiment (scientific method)

 -Vocab – biogeochemical, energy, ecological pyramids, biomass, nutrients, photosynthesis,

 cellular respiration, micro-organisms

And be able to:

 -illustrate energy

 -model cycles

 -analyze the strengths and limitations of models

 -explain role of decomposers

 -describe examples of data collection and explanations

 -design and conduct experiments

 -consider other sources of information

 -describe energy

 -identify and evaluate energy flow

 -provide examples (technology)