



Oxford City Schools

Proficiency Scale

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GRADE LEVEL: 12 COURSE NAME: Environmental Science
MEASUREMENT TOPIC: Illustrate How Energy Flows Through Ecosystems

4

In addition to Score 3, the student makes in-depth inferences and applications.

3

The student can:

- **Use mathematical representations to illustrate how the first two laws of thermodynamics demonstrate energy transfers through ecosystems, including food chains, food webs, and trophic levels, at various levels of biological organization.**
- **Evaluate and communicate information to model the cycling of matter through the biosphere, atmosphere, hydrosphere, and geosphere, including the flow of carbon, water, nitrogen, phosphorus, and sulfur.**

2

The student can:

- **Obtain information to model the cycling of matter through the biosphere, atmosphere, hydrosphere, and geosphere, including the flow of carbon, water, nitrogen, phosphorus, and sulfur.**
- **Show how carbon, water, nitrogen, phosphorus, and sulfur flow through the 4 spheres**
- **Identify the 4 spheres of the Earth—biosphere, atmosphere, hydrosphere, and geosphere**
- **Understand the 1st & 2nd Laws of Thermodynamics**
- **Explain what food chains, food webs, and trophic levels are.**
- **Identify the different levels of biological organization**

1	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Key Vocabulary:	