THE STANDARD

Interactions in Ecosystems

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

DCI
DISCIPLINARY CORE IDEA

LS2.A · Interdependent Relationships in Ecosystems

> *Although the species involved in these competitive, predatory, and mutually beneficial interactions vary across ecosystems, the patterns of interactions of organisms with their environments, both living and nonliving, are shared.*

Organisms interact in a small number of repeating ways. They compete for the same resource. They eat each other. They help each other. One uses another without affecting it. One uses another and harms it. The species change from ecosystem to ecosystem, but the categories don't. **A predator-prey relationship in the Serengeti works the same way as a predator-prey relationship in the Pacific.**

SEP
SCIENCE & ENGINEERING PRACTICE

Constructing Explanations and Designing Solutions

> *Construct an explanation that includes qualitative or quantitative relationships between variables that predict phenomena.*

Students aren't just naming relationships. They're building an explanation that uses what they've seen in one ecosystem to predict what they'll see in another. **If they understand the pattern, they can look at a new ecosystem they've never studied and call the shot: "this is competition," "this is mutualism." That's the work.**

CCC
CROSSCUTTING CONCEPT

Patterns

> *Patterns can be used to identify cause and effect relationships.*

Patterns are the lens. Once students can spot a category of interaction in one place, they recognize it everywhere. The same five relationship types appear in deserts, oceans, forests, and savannas. Different cast, same script. **That repeating structure is what makes prediction possible.**