THE STANDARD

Designs for Biodiversity

Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

DCI
DISCIPLINARY CORE IDEA

LS2.C · Ecosystem Dynamics, Functioning, and Resilience

> *Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health.*

Biodiversity is the variety of life: genes, species, and whole ecosystems. The more variety an ecosystem holds, the more it can absorb shocks and keep running. Humans get tangible benefits from those running ecosystems, called ecosystem services. Pollination, clean water, fertile soil, flood control, oxygen, climate regulation. **When biodiversity drops, those services start to drop with it.**

SEP
SCIENCE & ENGINEERING PRACTICE

Engaging in Argument from Evidence

> *Evaluate competing design solutions based on jointly developed and agreed-upon design criteria.*

Students aren't picking the "right" answer. They're evaluating several real options against criteria they helped build, weighing trade-offs, and arguing for one with evidence. The work is the comparison, not the conclusion. A student who picks Solution A with weak reasoning hasn't met the standard. **A student who picks Solution B and can defend why against the others has.**

CCC
CROSSCUTTING CONCEPT

Stability and Change

> *Small changes in one part of a system might cause large changes in another part.*

Ecosystems look steady until they aren't. A small change (one missing pollinator, one warmer summer, one new road through a habitat) can cascade into big change. **Students reason about what stays stable, what shifts, and which design solutions push the system back toward stability instead of past a tipping point.**