

Evolve to Survive

Continually incorporate and embody information to ensure enduring performance.

Replicate Strategies that Work

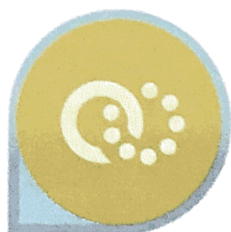
Repeat successful approaches.

Integrate the Unexpected

Incorporate mistakes in ways that can lead to new forms and functions.

Reshuffle Information

Exchange and alter information to create new options.



Be Resource (Material and Energy) Efficient

Skillfully and conservatively take advantage of resources and opportunities.

Use Multi-functional Design

Meet multiple needs with one elegant solution.

Use Low Energy Processes

Minimize energy consumption by reducing requisite temperatures, pressures, and/or time for reactions.

Recycle All Materials

Keep all materials in a closed loop.

Fit Form to Function

Select for shape or pattern based on need.



Adapt to Changing Conditions

Appropriately respond to dynamic contexts.

Maintain Integrity through Self-renewal

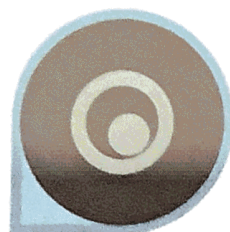
Persist by constantly adding energy and matter to heal and improve the system.

Embody Resilience through Variation, Redundancy, and Decentralization

Maintain function following disturbance by incorporating a variety of duplicate forms, processes, or systems that are not located exclusively together.

Incorporate Diversity

Include multiple forms, processes, or systems to meet a functional need.



Integrate Development with Growth

Invest optimally in strategies that promote both development and growth.

Combine Modular and Nested Components

Fit multiple units within each other progressively from simple to complex.

Build from the Bottom Up

Assemble components one unit at a time.

Self-organize

Create conditions to allow components to interact in concert to move towards an enriched system.



Be Locally Attuned and Responsive

Fit into and integrate with the surrounding environment.

Use Readily Available Materials and Energy

Build with abundant, accessible materials while harnessing freely available energy.

Cultivate Cooperative Relationships

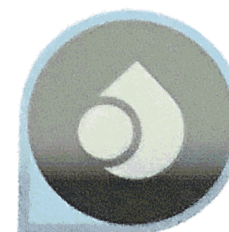
Find value through win-win interactions.

Leverage Cyclic Processes

Take advantage of phenomena that repeat themselves.

Use Feedback Loops

Engage in cyclic information flows to modify a reaction appropriately.



Use Life-friendly Chemistry

Use chemistry that supports life processes.

Build Selectively with a Small Subset of Elements

Assemble relatively few elements in elegant ways.

Break Down Products into Benign Constituents

Use chemistry in which decomposition results in no harmful by-products.

Do Chemistry in Water

Use water as solvent.