Learning Architecture: 3D Specifications

E

Performance Expectation Theme

2-LS2-1

Plan and conduct an investigation to determine if plants need sunlight and water to grow.

2-LS4-1

Make observations of plants and animals to compare the diversity of life in different habitats.

Disciplinary Core Ideas (DCIs)

LS2.A: Interdependent Relationships in Ecosystems

Plants depend on water and light to grow.

LS4.D: Biodiversity and Humans

There are many different kinds of living things in any area, and they exist in different places on land and in water.

Science & Engineering Practices (SEPs)

Analyzing & Interpreting Data

Asking Questions (for science) & **Defining Problems** (for engineering)

Planning & Carrying Out Investigations

- Plan and conduct an investigation … to produce data to serve as the basis for evidence to answer a question.
- Make observations … to collect data which can be used to make comparisons.

Developing & Using Models

Constructing Explanations (for science) & **Designing Solutions** (for engineering)

Using Mathematical & Computational Thinking

Engaging in Argument from Evidence

Obtaining Evaluating & Communicating Information

Crosscutting Concepts (CCs)

Cause & Effect

Events have causes that generate observable patterns.

Systems & System Models

Structure & Function

The shape and stability of structures of natural and designed objects are related to their function(s).

Patterns

Scale, Proportion & Quantity

Energy & Matter

Stability & Change

Phenomena & Questions

Phenomena:

Plants in the classroom

Questions:

- why are the plants on the teacher's desk dying?
- Not being watered… not near sunlight

Phenomena:

The plant near the window is dying

Questions:

- why is the plant by the window dying when it has enough sunlight
- why are the flowers outside so colorful + lively + our inside flowers are dying?

Phenomena:

Student vacation to Florida – sees palm trees

Questions:

- why don't we have palm trees in Ohio?

Phenomena:

Student's parents buy oranges at the grocery store.

Questions:

- can I grow oranges in my back yard?

Learning Performances

Students will	ask questions	about	why the teacher's plants are dying	to discover the	cause and effect relationship	between	amounts of sun, water, nutrients needed for plant survival.
Students will	ask questions	about	why some fruits/ veg only grow in certain areas	to discover the	cause and effect relationship	between	living things' needs and its environment.
Students will	planning and carrying out investigations	about	how much water + sunlight a particular plant needs	to discover that a plant's	structure & function	relates to	survival in certain habitats.
Students will	Analyze and interpret data	on	how much water + sunlight a particular plant needs	to discover the	cause and effect relationship	between	amounts of sun, water, nutrients needed for plant survival.